"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPA, Edward, dr inz.

Studies on the possibilities of dehydrating and gasifying raw sewage sediments. Gaz woda techn sanit 37 no.12:415-419 D '63.

1. Department of Technology of Water and Sewage, Technical University, Wroclaw.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

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KEMPA, Edward

Use of fabrics of artificial fibers in sewage sediment draining processes. Gaz woda techn sanit 38 no.4:124-128 Ap '64

1. Department of Water and Sewage Technology, Technical University, Wroclaw.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPA, Edward

Studies on the combustion properties of raw sewage sludge from cities. Chemia stosow A 8 no.3:345-359 '64.

1. Department of Technology of Water and Sewages of the Wroclaw Technical University.

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LEONOWICZ, Konstanty; KEMPA, Jadwiga

Effect of heparin and decholine on Congo red binding by serum proteins during nutritional lipemia. Polski tygod. lek. 15 no.21:777-778 23 May '60.

1. Z II Kliniki Chorob Wewnetrznych A.M. w Gdansku, kierownik: prof. dr Jakub Penson
(BILE ACIDS AND SALTS pharmacol)
(HEPARIN pharmacol)
(BLOOD PROTEINS)
(AZO COMPOUNDS Blood)
(LIPIDS blood)

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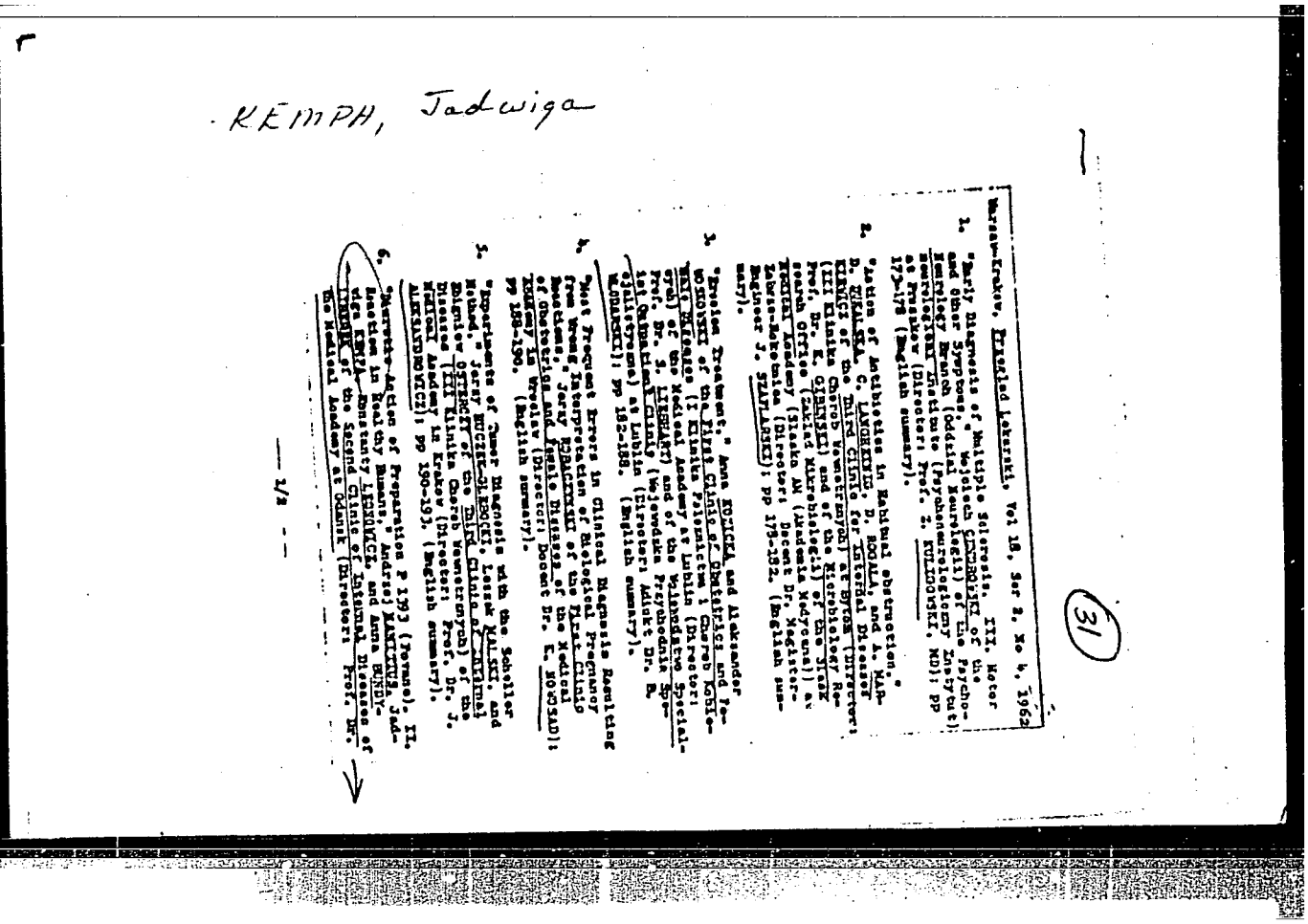

KEMPH, Jadwiga

Warsaw-Krakov, Przegląd Lekarski, Vol 18, No 2, No 4, 1962

1. "Early Diagnosis of Multiple Sclerosis, III. Motor and Other Symptoms." Wojciech [illegible] of the Psychoneurological Branch (Adjunct Neurologist Zofia Tutaj) Henryków Branch of the Institute (Psychoneurological Institute (Director: Prof. Z. [illegible], MD); pp 173-178 (English summary).

2. "Action of Antibiotics in Natural Observation." Wanda [illegible] and Jan [illegible] of the Clinic for Internal Diseases (Director: Prof. Dr. K. [illegible]) and of the Microbiology Research Office (Head: [illegible]) at the Silesian Medical Academy (Silesia AM (Akademia Medyczna)) at Zabrze-Rokitnica (Director: Docent Dr. Magister Engineer J. [illegible]); pp 179-182. (English summary).

3. "Ovulation Treatment," Anna [illegible] and Aleksander [illegible] of the First Clinic of Obstetrics and Gynecology (I Klinika Położnictwa i Chorób Kobiecych) of the Silesian Medical Academy at Lublin (Director: Prof. Dr. S. [illegible]) and of the Wojewódzka Specjalistyczna Przychodnia Specjalistyczna (Wojewódzka Przychodnia Specjalistyczna) at Lublin (Director: Mgr. [illegible]); pp 183-188. (English summary).

4. "Post Frequent Errors in Clinical Diagnosis Resulting from Wrong Interpretation of Biological Pregnancy Reactions," Jerzy [illegible] of the First Clinic of Obstetrics and Female Diseases of the Medical Academy in Wrocław (Director: Docent Dr. E. [illegible]); pp 189-190. (English summary).

5. "Importance of Tumor Diagnosis with the Schiller Method," Jerzy [illegible], Leszek [illegible], and Roland [illegible] of the Third Clinic of Internal Diseases (III Klinika Chorób Wewnętrznych) Prof. Dr. J. [illegible] Academy in Kraków (Director: Prof. Dr. [illegible]); pp 190-193. (English summary).

6. "Narrative Aides of Preparation P 1993 (Pernox)," Halina [illegible], Andrzej [illegible], Jadwiga [illegible], Danuta [illegible], and Anna [illegible] of the [illegible] Clinic of Internal Diseases of the Second Clinic of Internal Diseases (Director: Prof. Dr. [illegible]) of the Medical Academy at Gdańsk (Director: [illegible])

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPA, Jan. mgr inz.

The House of the Technician in Danzig. Przegl techn 85 no. 25:4,8 21 Je '64.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

BIELSKI, Tadeusz, dr. med.; KEMPARA, Janusz

A case of congenital deformity of the carpal bones associated with hypoplasia of the thenar muscles. Chir. narzad. ruchu ortop. Pol. 30 no.1:73-77 '65

1. Z Oddziału Ortopedyczno-Urazowego Szpitala Miejskiego im. dr. A. Mieleckiego w Chorzowie (Ordynator: dr. med. T. Bielski).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

ACCESSION NR: AT4040783 S/2657/64/000/011/0203/0213

AUTHOR: Kempe, F., Popov, I. A.

TITLE: Frequency stability of an autogenerator using a tunnel diode in the face of feed voltage fluctuations

SOURCE: Poluprovodnikovy*ye pribory* i ikh primeneniye; sbornik statey, no. 11, 1964, 203-213

TOPIC TAGS: autogenerator, autogenerator stability, germanium diode, frequency stability, tunnel diode, semiconductor device, harmonic generator

ABSTRACT: The purpose of the present paper was to determine the effect of a variation in feed voltage on the frequency stability of harmonic autogenerators using a tunnel diode. The dependence of auto-oscillation frequency stability on feed voltage for a single simple autogenerator arrangement with an external parallel LC oscillatory circuit is analyzed. The circuit elements C_b, L_{choke} and R_{noise} are designed to block and suppress spurious oscillations (see Figure 1, a in the Enclosure). The analysis is made on the basis of the circuit shown in Figure 1, b, with allowance for the non-linearity of the volt-ampere characteristics and the natural capacitance of the junction C_o, but without consideration of

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the lead inductance L_s or the series loss resistance of the diode r_s. The authors maintain that the effect of the last two factors is of no consequence only on frequencies for which the following inequality is satisfied:

$$|r_s + j\omega L_s| \ll R_0. \quad (1)$$

(R_0 is the equivalent resistance of the circuit). For modern tunnel diodes, this inequality is valid for frequencies of less than 100 Mc. Thus, the analysis presented in the article is valid for comparatively low radio frequencies. The effect of junction capacitance and upper harmonics is studied, and experimental investigations are described, the purpose of which was to check the order of frequency stability as a function of feed voltage variation and the dependence of stability on the position of the reference point on the characteristic curve and on the regeneration margin. The authors show that below a certain frequency f', provided the mode and circuitry have been correctly selected, frequency stability is determined by the upper harmonics. At higher frequencies, frequency stability is impaired because of the capacitance of the junction. The effect of the upper harmonics does not depend on frequency and for realistic circuit Q's and proper modes and circuit arrangements for germanium diodes it gives a frequency stability on the order of $(3 - 5) \cdot 10^{-6}$ for a 10% supply-voltage drift. Other conclusions, together with formulas to express them, are given in the text of the article. Orig. art. has 5 figures, 8 formulas and 1 appendix.

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ACCESSION NR: AT4040783

SUBMITTED: 00 ENCL: 01

SUB CODE: EC NO REF SOV: 001 OTHER: 002

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ACCESSION NR: AT4040783

Enclosure 01

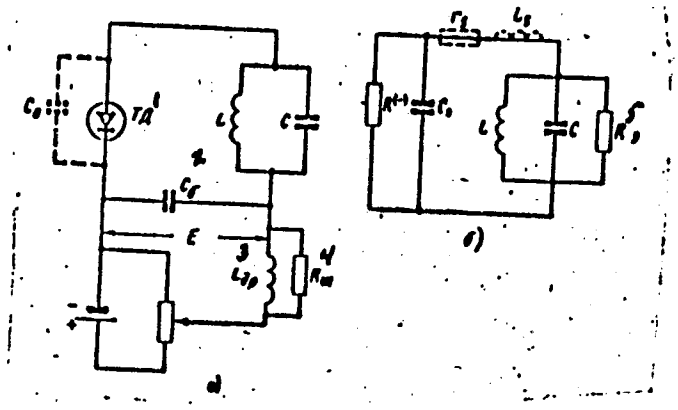

Fig. 1. Autogenerator circuit (a) and equivalent circuit (b): 1 - tunnel diode; 2- C_b; 3 - L_{choke}; 4 - R_{noise} 5 - R_{equ}.

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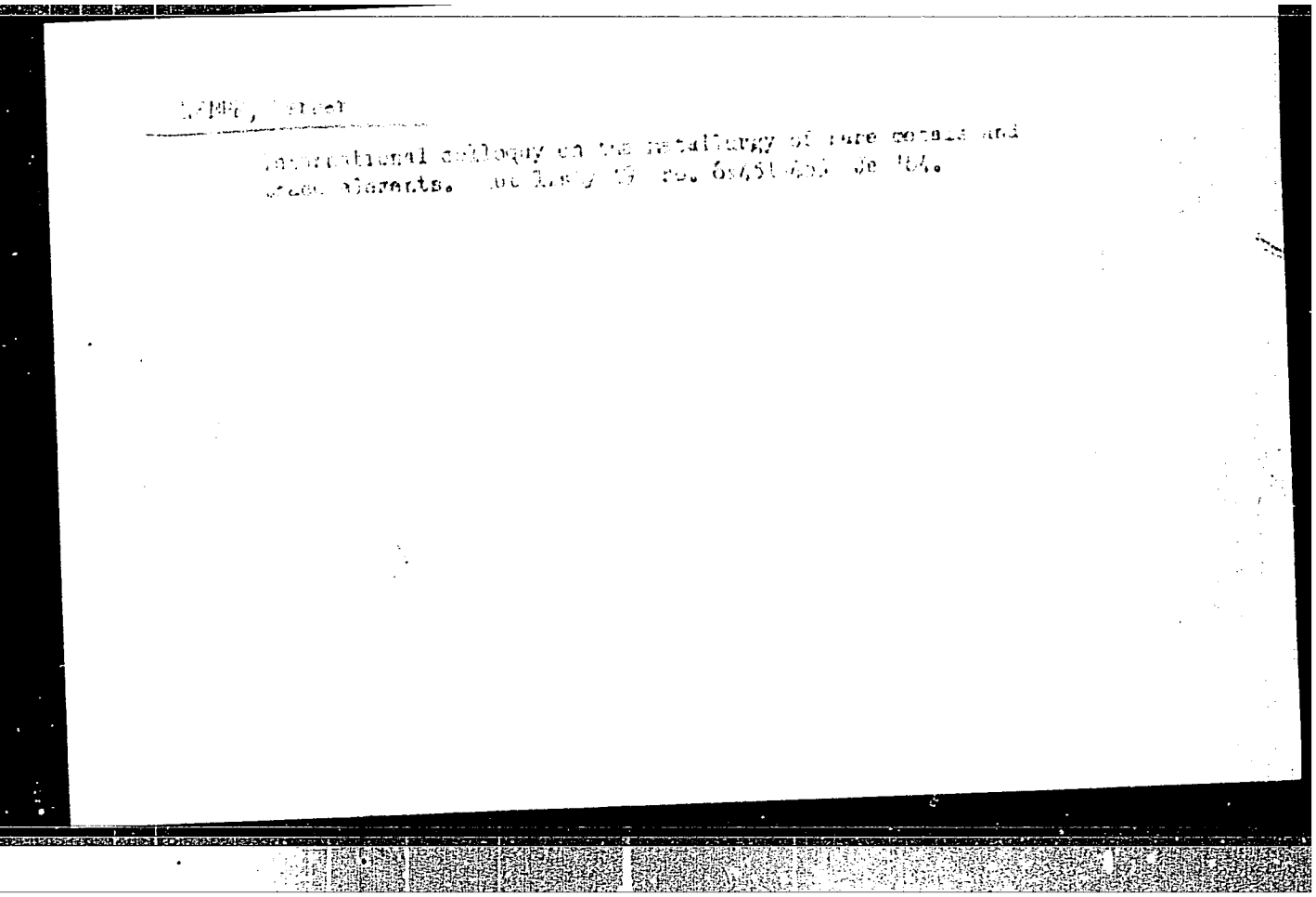

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPELEN, Attila, dr.

Newer investigations on human genital chromosomes. Term tud kozl 5 no.6:285 Je '61.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPELEN, Attila, dr.

Luminescence of marine life. Elovilag 8 no.2:26-29 Mr-Ap'63.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPELEN, Attila, dr.

Some significant morphogenetic laws governing the initial stage of life. Elovilag 7 no.4:11-17 Jl-Ag '62.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPELEN, Attila, dr.

Specific evolution of living organisms and structural analysis of inorganic substances. Elovilag 6 no.1:11-17 Ja-F '61.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPEIEN, Attila, dr.

Is hearing possible without the ears? Elet tud 18 no.37:1164-1167 15 S '63.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

[illegible], Attila, Dr.

Border cases, extreme adaptations in the world of living beings.
Elevilag 9 no.5:22-25 S-O '64.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPELEN, Attila, dr.

Some results of present-day anthropological research. Elovilag 9 no.6:3-9 Feb '64.

KEMPELEN, M.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

HUNGARY / Physical Chemistry. Thermodynamics, Thermochemistry, chemistry, Equilibria, Physical-Chemical Analysis, Phase Transitions.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60116.

Author : Sandor Lengyel, Marta Kempelen.
Inst : Academy of Sciences of Hungary.
Title : Theoretical Determination of Hydration Heat.

Orig Pub: Magyar tud. akad. Alkalm. mat. int. kozl., 1953, 2, 489-498.

Abstract: Admitting the dielectric saturation, the authors compute the hydration work of alkali metal halides. Rejecting the computation of Webb (Webb T. J., J. Amer. Chem. Soc., 1926, 48, 2589), the authors take into consideration the data of Kirkwood and Booth (Kirkwood J. G., J. Chem. Phys., 1939, 7, 911; Booth F., J. Chem. Phys., 1951, 19, 391) concerning the dielectric behaviour of water.

Card 1/1

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPER, H.

Journal of Applied Chemistry
April 1954
Industrial Inorganic Chemistry

Influence of flame-cleaning on properties of steels. H. Kemper and W. Pomaska (*Schweissen u. Schneiden*, 1953, 5, 201—207, 256—267; *J. Iron Steel Inst.*, 1954, 176, 148).—The effects of gases, dusts, and vapours, and the amount of rust encountered during flame-cleaning are discussed. The influence of temp. on the structure and strength of the steel under static stress and on ageing was investigated and a method developed for determining stresses in flame-cleaned material. The sample cut into sections and each section is examined individually with strain gauges. The crystal structure was examined by *X*-rays; stresses are highest at right-angles to the flame path. Tests were carried out on high-tensile steels to determine the effect of flame-cleaning on fatigue. The fatigue strength decreases slightly. Corrosion tests were carried out. Flame-cleaning is an effective method of rust removal. Brief mention is made of a new method of protection in which flame-cleaning is combined with a thermo-chemical treatment.

R. B. CLARKE.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

38117. KEMPER, M. M.

Bol'she vnimaniya rzavitiyu shchetino-shchetochnoy promyshlennosti.
Legkaya prom-st', 1949, no 11, s. 31

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPER, M. M.

Brooms and Brushes

New types of bristle brushes, Leg. prom., No. 1, 1952.

- Monthly List of Russian Accessions, Library of Congress, March 1952. Unclassified.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPER, M.M.

[Bristle and brush industry] Shchetinno-shchetochnoe proizvodstvo. [Moskva] Gos. izd-vo Ministerstva legkoi i pishchevoi promyshl., 1953. 270 p. (MLRA 7:2)

(Bristles) (Broom and brush industry)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPER, M.M.

ARBUZOV, S.V.; KEMPER, M.M.

Improving the quality and expanding the assortment of bristle and brush products. Leg.prom. 14 no.9:10-11 S '54. (MLRA 7:9)
(Brooms and brushes)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPER, M.M.

There should be a lowering of costs for products of the bristle-brush industry. Leg. prom. 16 no.1:13-14 Ja '56. (MLRA 9:6)
(Broom and brush industry)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPER, M.M.

Brush industry during the sixth five-year plan. Leg.prom.17 no.3: 10-11 Mr '57. (MLRA 10:4)

1. Starshiy nauchnyy sotrudnik RosTsNelkozh.
(Brooms and brushes)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPER, M.O.

ATAVINA, G. V., M. O. KEMPER, and D. I. LINETSKII.

Anodnaia poliarizatsiia v samoletostroenii; pod red. V. O. Krenig. Moskva, Glad. red. aviats. lit-ry, 1936. 47 p., illus.

Title tr.: Anode polarization in aircraft construction.

TL698. A78

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

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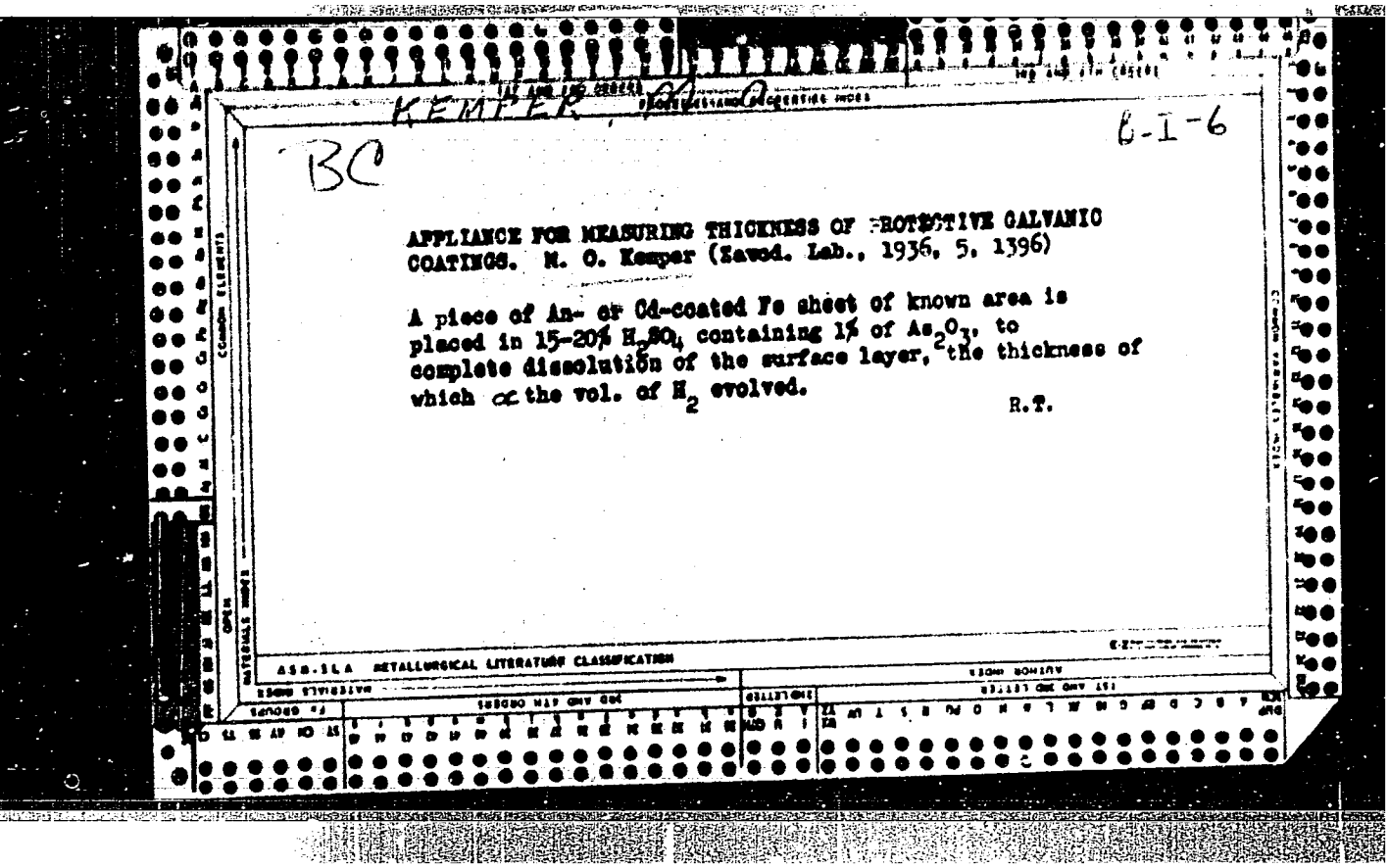

KEMPER

BC

6-I-6

APPLIANCE FOR MEASURING THICKNESS OF PROTECTIVE GALVANIC COATINGS. M. O. Kemper (Zavod. Lab., 1936, 5, 1396)

A piece of An- or Cd-coated Fe sheet of known area is placed in 15-20% H_2SO_4 containing 1% of As_2O_3, to complete dissolution of the surface layer, the thickness of which $\propto$ the vol. of H_2 evolved.

R.T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPI, A.A.

Effectiveness of the OP-10 dust-wetting agent during the drilling of holes. Zap. LGI 38 no.1:118-122 1959 (MIRA 14:3)
(Boring) (Dust—Prevention)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPI, A.A.

Wet method of dust prevention at below-freezing temperatures. Zap. LGI 46 no.1:47-51 '62. (MIRA 16:6)

(Mine ventilation--Cold weather conditions)
(Mine dusts--Prevention)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

CA KEMPIANKA, WL. HD

Phaseorubin. A. Kozlowski and Wl. Kempianka. *Acta Soc. Botan. Polon.* 18, 23-32(1947); *Bull. soc. botan. France* 97, 50(1950).—The tegument of bean seeds "Dig-bin" contains *phaseorubin* (I) composed from pyrocatechol and protocatechuic acid with a structure like anthocyan of Robertson and Robinson. I gets yellow with acids, and blue turning to red with bases. G. Sag

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KITIN, I.

Interference appearances in Fresnel's mirrors which have been moved apart. In German.

p. 53 (Glasnik Matematicko-Fizicki I Astronomski. Periodicum Mathematico-Physicum Et Astronomicum. Vol. 11, no. 1, 1956. Zagreb, Yugoslavia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMFIN, K.

"International Conference on Scientific and Applied Photography in London." Fotokemijska. Kemija U Industriji, Zagreb, Vol 3, No 5, May 1954, p. F22

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKAS, V.V.

Cats and the valerian. Priroda 50 no.8:124 Ag '61. (MIRA 14:7)

1. Kaunasskiy gosudarstvennyy meditsinskiy institut.
(CATS) (VALERIAN)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKAS, V., asist.; GURAUSKAS, V.

Toxic effects of methylthiouracil. Sveik. apsaug. no.5:32-33 '62.

1. Kauno Valstybinis medicinos institutas. 2. Vilkaviskio rajono ligonine.

(METHYLTHIOURACIL)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKAS, V.

Action of valerian. Farm. i toks. 27 no.3:305-309 My-Je '64.
(MIRA 18:4)

1. Kafedra farmakologii (zav. - dotsent A.Mitskis) Kaunasskogo meditsinskogo instituta.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

ADZHIMAMUDYAN, N.I.; KEMPINSKAYA, A.V.; UZDIN, M.M.; SHILOV, R.M.; ZAYTSEV, V.I., retsenzent; LUTOVINOV, G.V., retsenzent; PISAREVA, Ye.I., red.

[Fundamentals of construction planning of depots and plants for railroad transportation and of the planning of their territories] Osnovy stroitel'nogo proektirovaniia depo i zavodov zheleznodorozhnogo transporta. [By] N.I.Adzhimamudian i dr. Leningrad, Leningr. in-t inzhenerov zhel-dor. transporta im. V.N.Obraztsova, 1963. 79 p. (MIRA 17:7)

1. Rukovoditel' gruppy Leningradskogo Gosudarstvennogo instituta proyektirovaniya na transporte (for Zaytsev). 2. Leningradskiy Gosudarstvennyy institut proyektirovaniya na transporte (for Pisareva)

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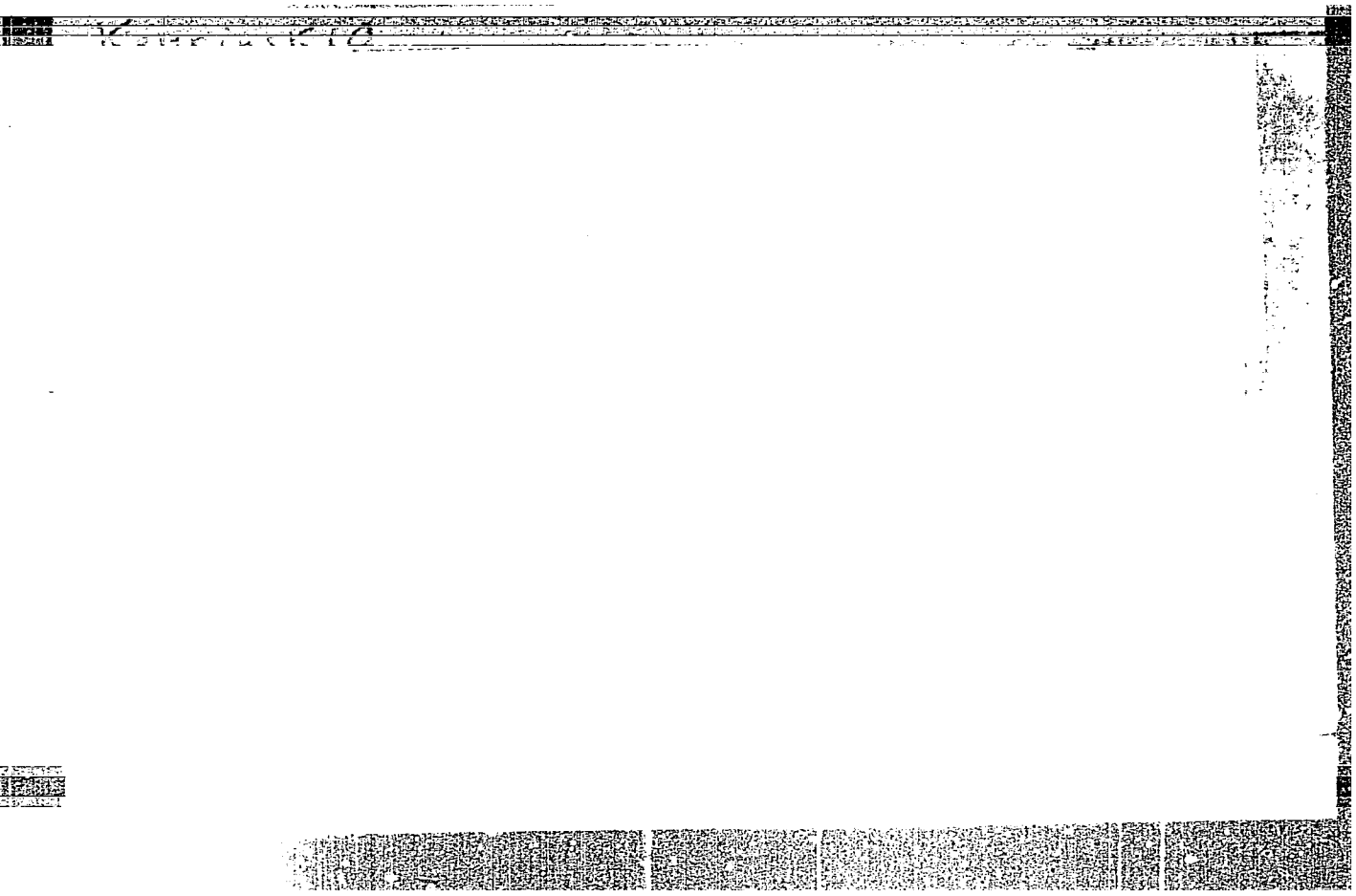

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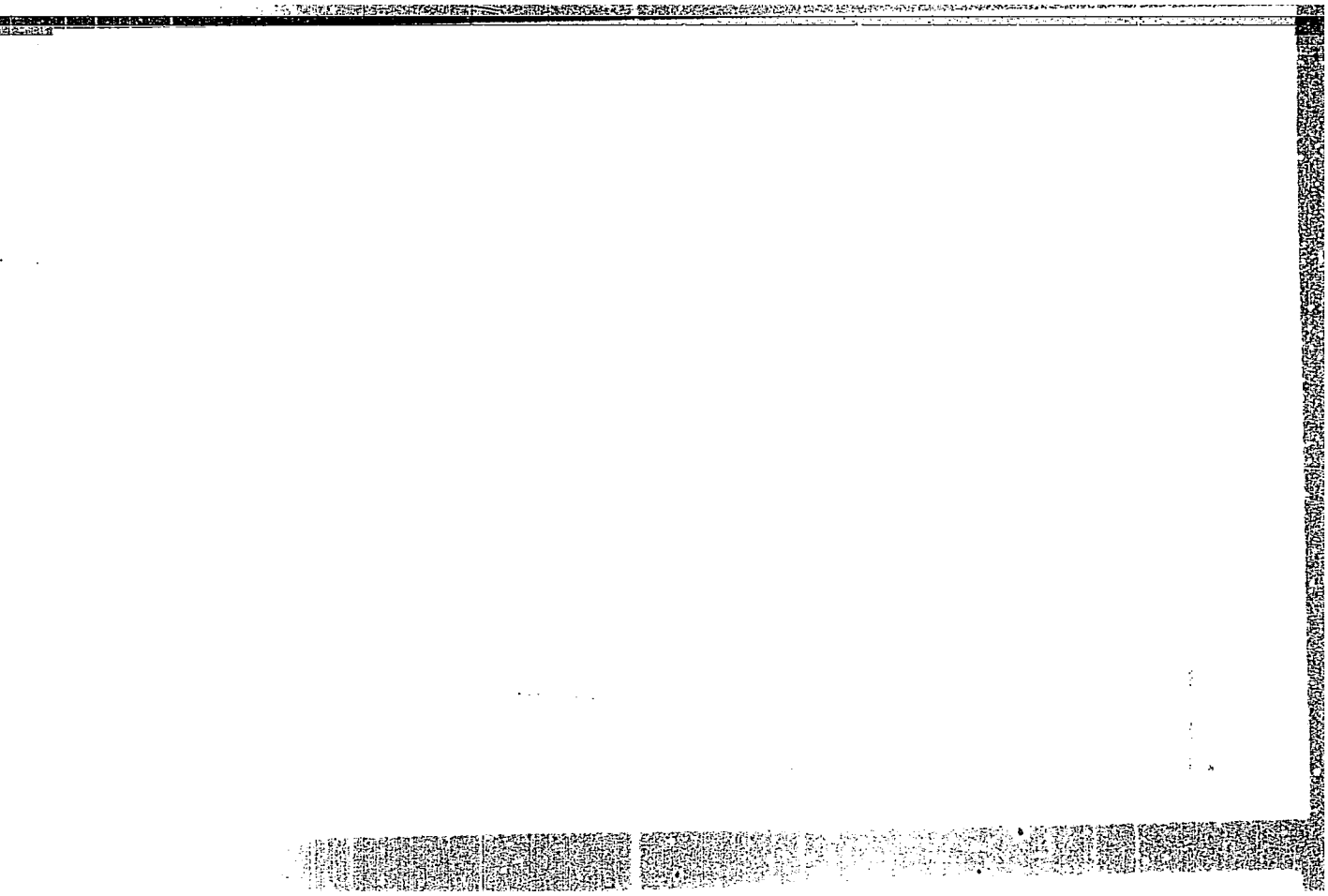

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

Kempinski Olgierd

POLAND/Analytical Chemistry - Analysis of Inorganic Substances. E-2

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24765

Author : Zagorski Zbigniew, Kempinski Olgierd
Inst : -
Title : Polarographic Determination of Traces of Thallium in Metallic Cadmium and Lead and Also in Iron-Cadmium Bodies.

Orig Pub : Chem. analit., 1956, 1, No 4, 273-284

Abstract : Description of a method of determining Tl in "cadmium sponge" (Cd, Fe and their oxides) (CS) of alkaline storage batteries, and also in metallic Cd and Pb. Concentration of Tl by precipitation of the thio-urea-perchlorate complex of Tl (RZhKhim, 1953, 9121; 1955, 40326) does not yield satisfactory results since Cd is almost completely precipitated together with the Tl. Good results were obtained on using the extraction method. 3 g CS are dissolved in 30 ml 7 N HNO_3, the insoluble residue filtered off, the filtrate is evaporated to 10 ml, transferred to the

Card 1/2

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Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24765

extraction apparatus, 5 ml of bromine water are added and extraction with ether is conducted for 5 hours. The extract is evaporated, 2 ml of HNO_3 and H_2SO_4 are added, and the mixture is evaporated to dryness. The residue is dissolved in 5 ml of the background solution (300 ml 25% NH_4OH + 214 g NH_4Cl + 300 ml warer saturated with SO_2 + 2.2 liters of water) and subjected to polarography. Under the described conditions of extraction Tl is separated from Fe, Cd, Cu and Pb. Analogously Tl is determined in metallic Pb and Cd. Relative error of determination of Tl in CS (10^{-3}% Tl) is ± 8%, while in metallic Pb and Cd containing 10^{-2}% Tl, it is of 10^{-2}% [?] ± 3%.

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Card : 1/2

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KRASINSKI, O.; ZAGORSKI, Z.

Concentrating traces of silver contained in lead by the precipitation method. p. 423.

CHEMIA ANALITYCZNA. (Komisja Analitycana Polskie Akademii Nauk i Naczelna Organizacja Techniazna) Warszawa. Poland. Vol. 4, No. $\frac{1}{2}$, 1959.

Monthly list of East European Accessions (EEAI) LC. Vol. 8, No. 8, August 1959 Uncla.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKI, S.

"Mechanizing longwall cutting", p. 137, (WIADOMOSCI GORNICZE, Vol. 5, No. 5, May 1954, Katowice, Poland)

SO: Monthly List of East Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

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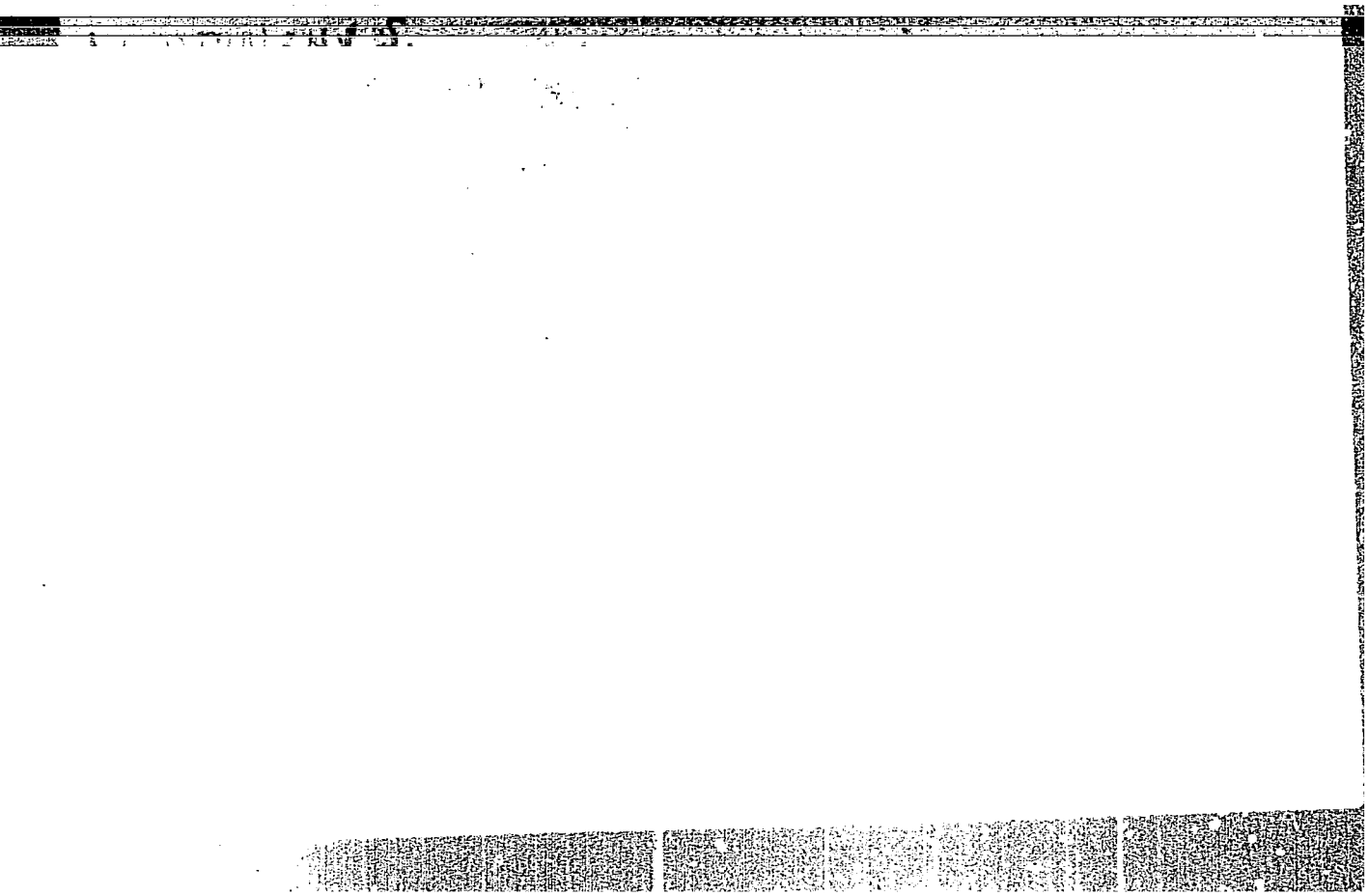

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KEMPINSKI, S.; Ledwoch, Z.; Fober, H.

The results of working with the Donbas combines in Poland. p. 3.
(PRACE. No. 17, 1956, Katowice, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, no. 12, Dec. 1957.
Uncl.

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KEMPINSKI, S.

"Two Shifts a Day Using Combines" p. 194 (Wiadomosci Cornicze, Vol. 4, No. 7/8 July/Aug, 1953, Katowice)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, February, 1954, Uncl.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKI, S.

Polish Technical Abst. No. 4, 1953 Mining

2374 658.542.1:622.233.282.25(438)

Cierpisz S., Kempinski S. Operation Results of the Donbass Cutter-Loader in Polish Collieries.
Wyniki zastosowania kombajnu Donbass w naszych kopalniach. Przeglad Gorniczy. No. 2, 1953, pp. 48-57, 6 figs., 4 tabs.
The Donbass cutter loader gives good results, in such conditions as obtain in Polish coal mines, in walls of from 60 to 150 m long, in seams 0.9 to 2 m thick and at gradient not exceeding 20°. The coal should, according to Protodiakonow, have a cohesion factor of not more than 1.4, and contain no hard intergrows or interlocations. The top bank should easily part from the roof. The floor should not be inferior to that used for cutters, while the roof should be of a quality to enable it to be exposed, for a short period, along a width of 4 m from the new face. Work organisation, harmonograms providing for the completion of one cycle per two shifts. Practical recommendations for operating the cutter-loader (feeding speed, remedying breakdown).

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KE[illegible], A. (Varshava)

Protective sanitary zones for the sources of water supply in Poland. Vod. i san. tekh. no.9:38-39 S '61. (MIRA 14:11)
(Poland--Water-supply engineering)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKIY, M.M.

Application of the theory of best approximation functions to the analysis of measuring instrument precision. Izm. tekh. no.2:6-11 Mr-Ap '55. (MLRA 8:9)
(Measuring instruments)

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ABADZHI, K.I.; BOYTSOV, A.N.; VOLOSEVICH, F.P.; GOBERMAN, P.N.; KUTAY, A.K.; NARINSKIY, F.I.; ODING, G.A.; RUBINOV, A.D.; SHTYURMER, G.A.; BRZHEZINSKIY, M.L., kandidat tekhnicheskikh nauk, retsenzent; PETROV, V.I., inzhener, retsenzent; KEMPINSKIY, M.M., inzhener, redaktor; LEYKINA, T.L., redaktor izdatel'stva; POL'SKAYA, R.G., tekhnicheskiy redaktor

[Reference manual for production control in machine building] Spravochnik po proizvodstvennomu kontroliu v mashinostroenii. Pod obshchei red. A.K.Kutai. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 670 p. (MLRA 9:12)
(Machinery industry)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKIY, M. M.

Kempinskiy, M. M. (Leningrad). Calculation for Accuracy in Designing Measuring Instruments p. 245

Interchangeability, Accuracy and Measuring Methods in Machine Building, Moscow, Mashgiz, 1958, 274 pp. (Sbornik Nauchno-tekh. obshch. mashinostroitel'noy promyshlennosti, Leningradskoye oblast pravleniya, kn. 47).

This collection of articles deals with the topics discussed at the 3rd Leningrad Sci. and Engineering Conference on Interchangeability, accuracy and Inspection Methods in Machine-building and Instrument-making, held 18-22 Mar 1957.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKIY, M.M. (Leningrad)

Designing measuring instruments for precision. [Izd.] LONITOMASH 47:245-250 '58. (MIRA 11:10)

1. Rukovoditel' sektsii avtomatizatsii i mekhanizatsii kontrolya; podnaladki nauchno-tekhnicheskogo obshchestva Mashproma.
(Measuring instruments)

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28(1) PHASE I BOOK EXPLOITATION SOV/2915

Kempinskiy, Mikhail Mendelevich

Proyektirovaniye mekhanizmov izmeritel'nykh priborov (Designing Mechanisms for Use in Measuring Instruments) Moscow, Mashgiz, 1959. 142 p. Errata slip inserted. 5,000 copies printed.

Reviewer: L. P. Riftin, Candidate of Technical Sciences; Ed.: G. A. Smirnov, Candidate of Technical Sciences; Ed. of Publishing House: N. Z. Simonovskiy; Tech. Ed.: O. V. Speranskaya; Managing Ed. for Literature on the Design and Operation of Machinery (Leningrad Division, Mashgiz): F. I. Fetisov, Engineer.

PURPOSE: This book is intended for engineers and scientists of design organizations and scientific research institutes concerned with instrument construction.

Card 1/ 4

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Designing Mechanisms (Cont.) SOV/2915

COVERAGE: This book deals with the theory and practice of designing mechanisms for use in measuring instruments. The mathematical background for approximating functions of complex mechanisms is presented. Determination of the parameters of a mechanism, manufacturing errors, compensation and regulation, and mechanism designs for instruments for linear and angular measurements are described. No personalities are mentioned. There are 29 references: 27 Soviet, 1 German, and 1 English.

TABLE OF CONTENTS:

Preface 3

Introduction 5

Ch. I. Necessary Information From the Theory of Optimum Approximations to Functions 9
1. Optimum uniform approximation 9
2. Polynomials least deviating from zero 12
3. Approximation of functions by polynomials to some power 17

Card 2/ 4

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKIY, Mikhail Mendelevich; TYUMENEVA, S.T., inzh., red.; FREGER, D.P., izd.red.; GVIRTS, V.L., tekhn.red.

[Measuring spring heads manufactured by the Leningrad Instrument Plant; experience in using and repairing] Pruzhinnye izmeritel'nye golovki Leningradskogo instrumental'nogo zavoda; opyt ekspluatatsii i remonta. Leningrad, 1961. 18 p. (Leningradskii Dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Kontrol' kachestva produktsii, no.1). (MIRA 14:6)
(Measuring instruments)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

KEMPINSKIY, Mikhail Mendelevich; OVCHINNIKOV, G.A., red.; VASIL'YEV, Yu.A., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[New devices for precision linear measurements; survey]Novye pribory dlia tochnykh lineinykh izmerenii; obzor. Leningrad, Leningr.dom nauchno-tekhn.propagandy, 1962. 75 p.
(MIRA 15:8)
(Measuring instruments) (Length measurement)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

ORLOV, P.M.; KEMTSOVA, S.P.; KASHINTSEV, S.N.; SASS-TISSOVSKIY, redaktor; UDALOV, A.G., tekhnicheskiy redaktor

[Breeds of cattle at the All-Union Agricultural Exhibition] Porody krupnogo rogatogo skota po materialam VSKhV. Izd. 2-oe, perer. i dop. [Moskva] Izd-vo Ministerstva sel'skogo khoziaistva SSSR, 1956. 143 p. (MLRA 10:1)

(Cattle breeds)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

JASNOWSKI, S.; MACKOWIAK, S.; KEMULA, F.

Influence of the stock on Venturia inaequalis (Cooke) Aderh. infecting apply trees. Acta agrobot 14 no.1:245-255 '63.

1. Laboratory of Seed Breeding and Evaluation and Nurseries, Institute of Pomology, Skierniewice.

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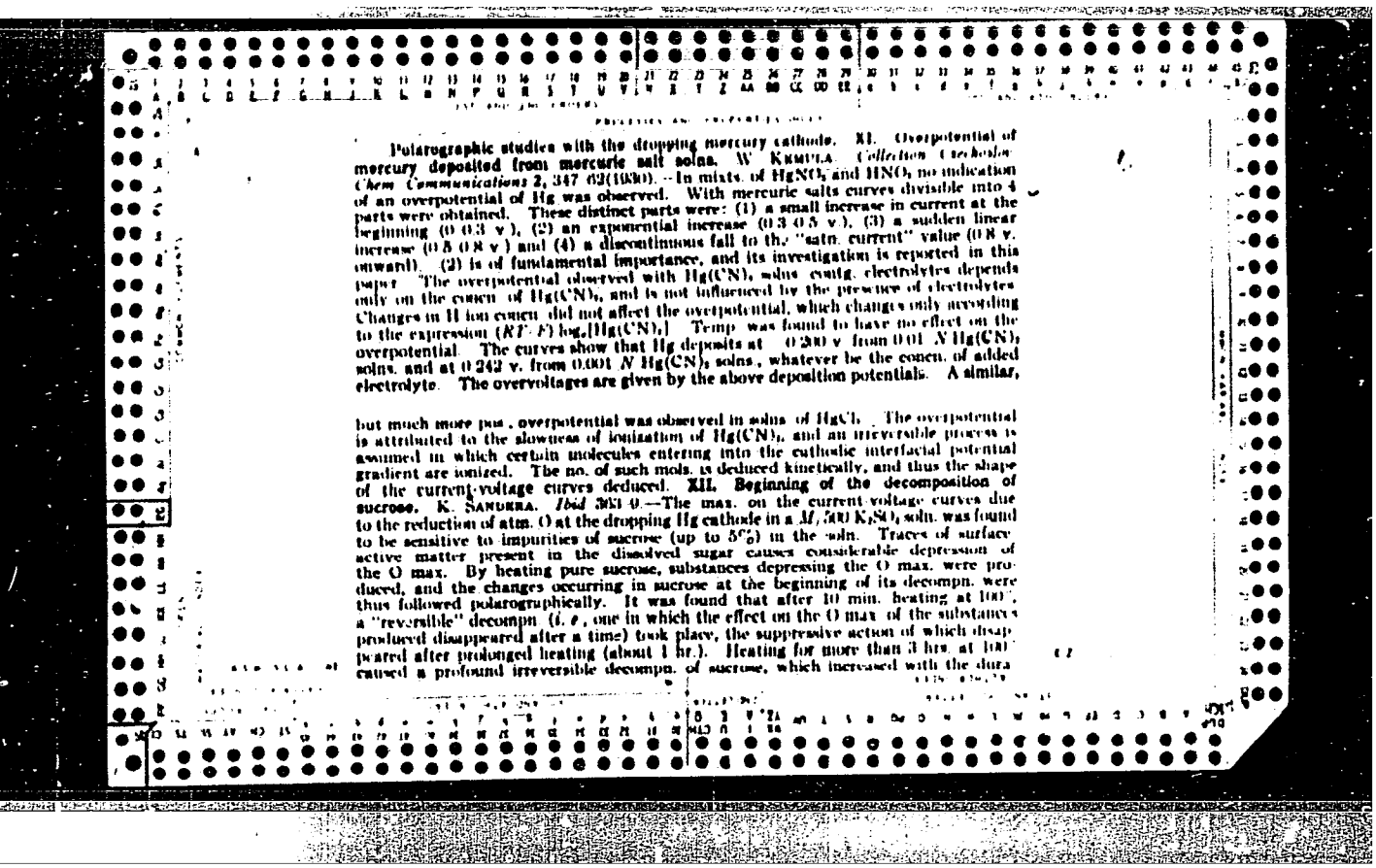

Polarographic studies with the dropping mercury cathode. XI. Overpotential of mercury deposited from mercuric salt solns. W. KEMULA. *Collection Czechoslov. Chem. Communications* 2, 347-62(1930).—In mixts. of $HgNO_3$ and HNO_3 no indication of an overpotential of Hg was observed. With mercuric salts curves divisible into 4 parts were obtained. These distinct parts were: (1) a small increase in current at the beginning (0-0.3 v.), (2) an exponential increase (0.3-0.5 v.), (3) a sudden linear increase (0.5-0.8 v.) and (4) a discontinuous fall to the "satn. current" value (0.8 v. onward). (2) is of fundamental importance, and its investigation is reported in this paper. The overpotential observed with $Hg(CN)_2$ solns. contg. electrolytes depends only on the concn. of $Hg(CN)_2$, and is not influenced by the presence of electrolytes. Changes in H ion concn. did not affect the overpotential, which changes only according to the expression $(RT/F)\log_e[Hg(CN)_2]$. Temp. was found to have no effect on the overpotential. The curves show that Hg deposits at −0.200 v. from 0.01 *N* $Hg(CN)_2$ solns. and at 0.242 v. from 0.001 *N* $Hg(CN)_2$ solns., whatever be the concn. of added electrolyte. The overvoltages are given by the above deposition potentials. A similar, but much more pos. overpotential was observed in solns. of HgCl$_2$. The overpotential is attributed to the slowness of ionization of $Hg(CN)_2$, and an irreversible process is assumed in which certain molecules entering into the cathodic interfacial potential gradient are ionized. The no. of such mols. is deduced kinetically, and thus the shape of the current-voltage curves deduced. **XII. Beginning of the decomposition of sucrose.** K. SANDERA. *Ibid* 363-9.—The max. on the current-voltage curves due to the reduction of atm. O at the dropping Hg cathode in a *M*/500 K_2SO_4 soln. was found to be sensitive to impurities of sucrose (up to 5%) in the soln. Traces of surface-active matter present in the dissolved sugar causes considerable depression of the O max. By heating pure sucrose, substances depressing the O max. were produced, and the changes occurring in sucrose at the beginning of its decompn. were thus followed polarographically. It was found that after 10 min. heating at 100°, a "reversible" decompn. (*i. e.*, one in which the effect on the O max. of the substances produced disappeared after a time) took place, the suppressive action of which disappeared after prolonged heating (about 1 hr.). Heating for more than 3 hrs. at 100° caused a profound irreversible decompn. of sucrose, which increased with the dura

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tion of heating at 100°, and which caused a permanent suppression of the O max. It was also observed that the O max. was depressed when the sputum was heated for 8 hrs. at 70°, showing that dry sputum begins to decompose at 70° even though, during its manuf., higher temps. are employed. XIII. Effect of albumins. J. HEYROVSKÝ AND J. HANIČKA. *Ibid* 370-9. The current voltage curves obtained by the polarographic method revealed the presence of albumins in soln. An NH_4 salt added to a soln. contg. albuminous matter increased the current at a potential about 0.2 v. more pos. than the potential at which NH_4 ions are deposited. In an excess of NH_4 ions the height of the wave due to albumins reached a limit, which was proportional to the content of sol. albumins in soln. The presence of albumins was detected in traces of 0.001%. The height of the albumin wave increased proportionally to the quantity of serum added. To prevent flocculation of the serum, dilu. was made by an isotonic soln. If dild. with water the serum solns. showed a sharply and irregularly decreasing albumin content; e. g., at a dilu. of 1:100 hardly any wave was observed. The best solvent proved to be a 0.146 *N* NH_4Cl soln., the test being most distinct when the soln. was allowed to stand for several hrs. in the cold after dilu. Additn. of HCl, AcOH and small quantities of alkalies did not affect the position of the albumin wave, although larger quantities of alkali caused the wave to decrease. When the albumin content of the soln. was kept const. the height of the wave was proportional to the concn. of NH_4 ions, reaching a max. height in a 0.2 *N* NH_4Cl soln. When albumin was added to a 0.2 *N* NH_4Cl soln. the height of the wave increased with increasing albumin content, until the height of the albumin wave reached that of the NH_4OH wave; further additn. did not increase the diffusion current although they still increased the absorption max. in which the albumin and the NH_4 waves conjointly terminated. Glycocol, asparagine and hydrochlorides of secondary amines behaved like NH_4 ions. Simpler amino acids, e. g., lecithin, were found not to produce the "albumin effect" on the current-voltage curves. Only undecompd. albumins produced the wave effect on the deposition curves of NH_4 and amine solns. Gelatin suppresses the wave. To explain the results, the view is taken that the increase in current due to the NH_4 ions is really furnished by the deposition of H ions from the equil. $NH_4^+ \rightleftharpoons H^+ + NH_3$. The albumin is assumed to assoc. with NH_4 ions, thus loosening the bond between the H ion and NH_3. The deposition of these loosely bound H ions then takes place more readily, i. e., at a more pos. potential, than normally, thus causing a wave on the current-voltage curve before that due to free NH_4 ions.

EDWARD H. SWINEHART

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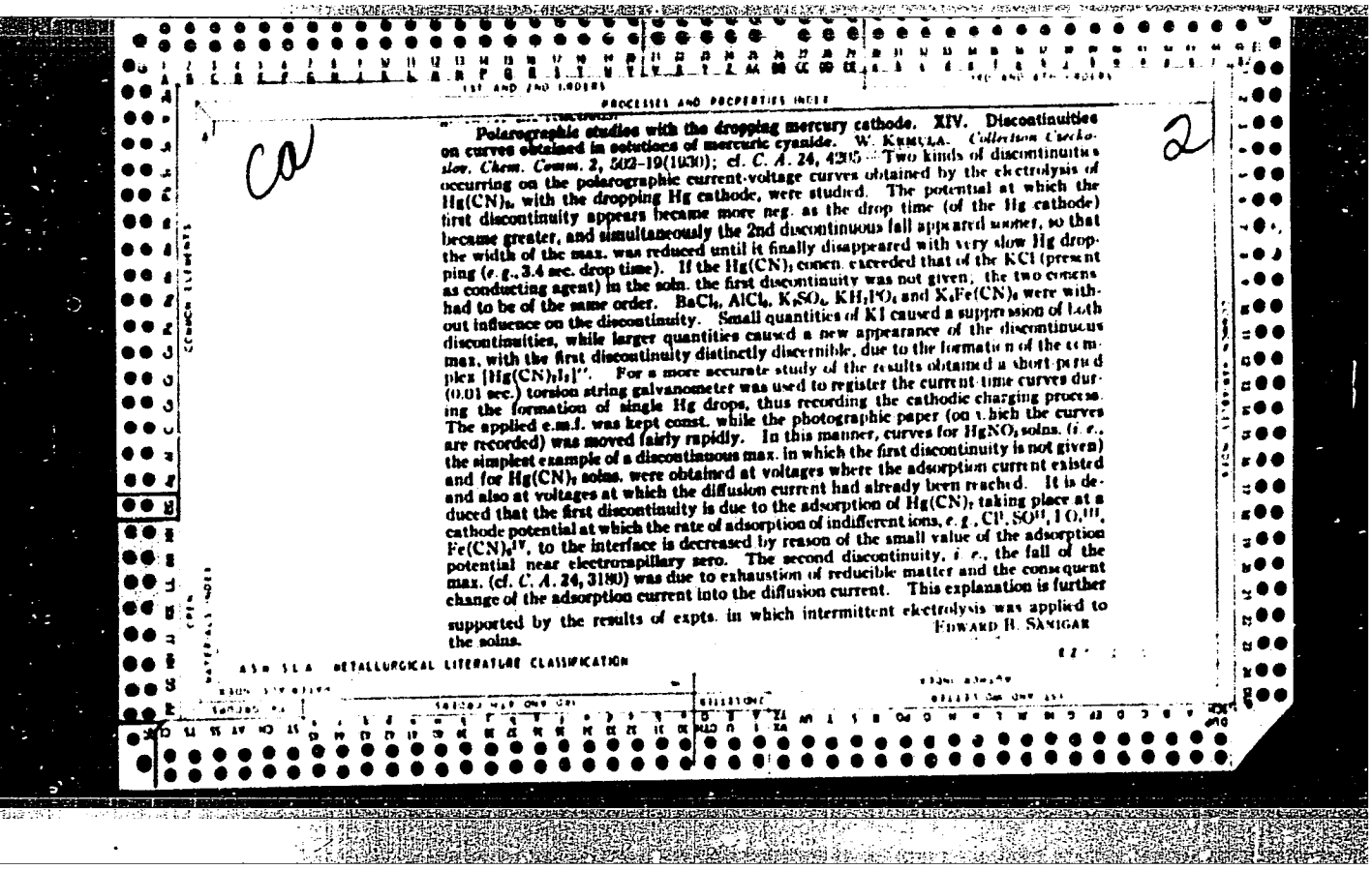

Polarographic studies with the dropping mercury cathode. XIV. Discontinuities on curves obtained in solutions of mercuric cyanide. W. KEMULA. *Collection Czechoslov. Chem. Comm.* 2, 502–19(1930); cf. *C. A.* 24, 4295.—Two kinds of discontinuities occurring on the polarographic current-voltage curves obtained by the electrolysis of $Hg(CN)_2$ with the dropping Hg cathode, were studied. The potential at which the first discontinuity appears became more neg. as the drop time (of the Hg cathode) became greater, and simultaneously the 2nd discontinuous fall appeared sooner, so that the width of the max. was reduced until it finally disappeared with very slow Hg dropping (*e.g.*, 3.4 sec. drop time). If the $Hg(CN)_2$ concn. exceeded that of the KCl (present as conducting agent) in the soln. the first discontinuity was not given; the two concns had to be of the same order. $BaCl_2$, $AlCl_3$, K_2SO_4, KH_2PO_4 and $K_4Fe(CN)_6$ were without influence on the discontinuity. Small quantities of KI caused a suppression of both discontinuities, while larger quantities caused a new appearance of the discontinuous max. with the first discontinuity distinctly discernible, due to the formation of the complex $[Hg(CN)_2I_2]''$. For a more accurate study of the results obtained a short-period (0.01 sec.) torsion string galvanometer was used to register the current-time curves during the formation of single Hg drops, thus recording the cathodic charging process. The applied e.m.f. was kept const. while the photographic paper (on which the curves are recorded) was moved fairly rapidly. In this manner, curves for $HgNO_3$ solns. (*i.e.*, the simplest example of a discontinuous max. in which the first discontinuity is not given) and for $Hg(CN)_2$ solns. were obtained at voltages where the adsorption current existed and also at voltages at which the diffusion current had already been reached. It is deduced that the first discontinuity is due to the adsorption of $Hg(CN)_2$ taking place at a cathode potential at which the rate of adsorption of indifferent ions, *e.g.*, Cl', SO^{II}, IO_3^{III}, $Fe(CN)_6^{IV}$, to the interface is decreased by reason of the small value of the adsorption potential near electrocapillary zero. The second discontinuity, *i.e.*, the fall of the max. (cf. *C. A.* 24, 3180) was due to exhaustion of reducible matter and the consequent change of the adsorption current into the diffusion current. This explanation is further supported by the results of expts. in which intermittent electrolysis was applied to the solns.

EDWARD B. SANIGAR

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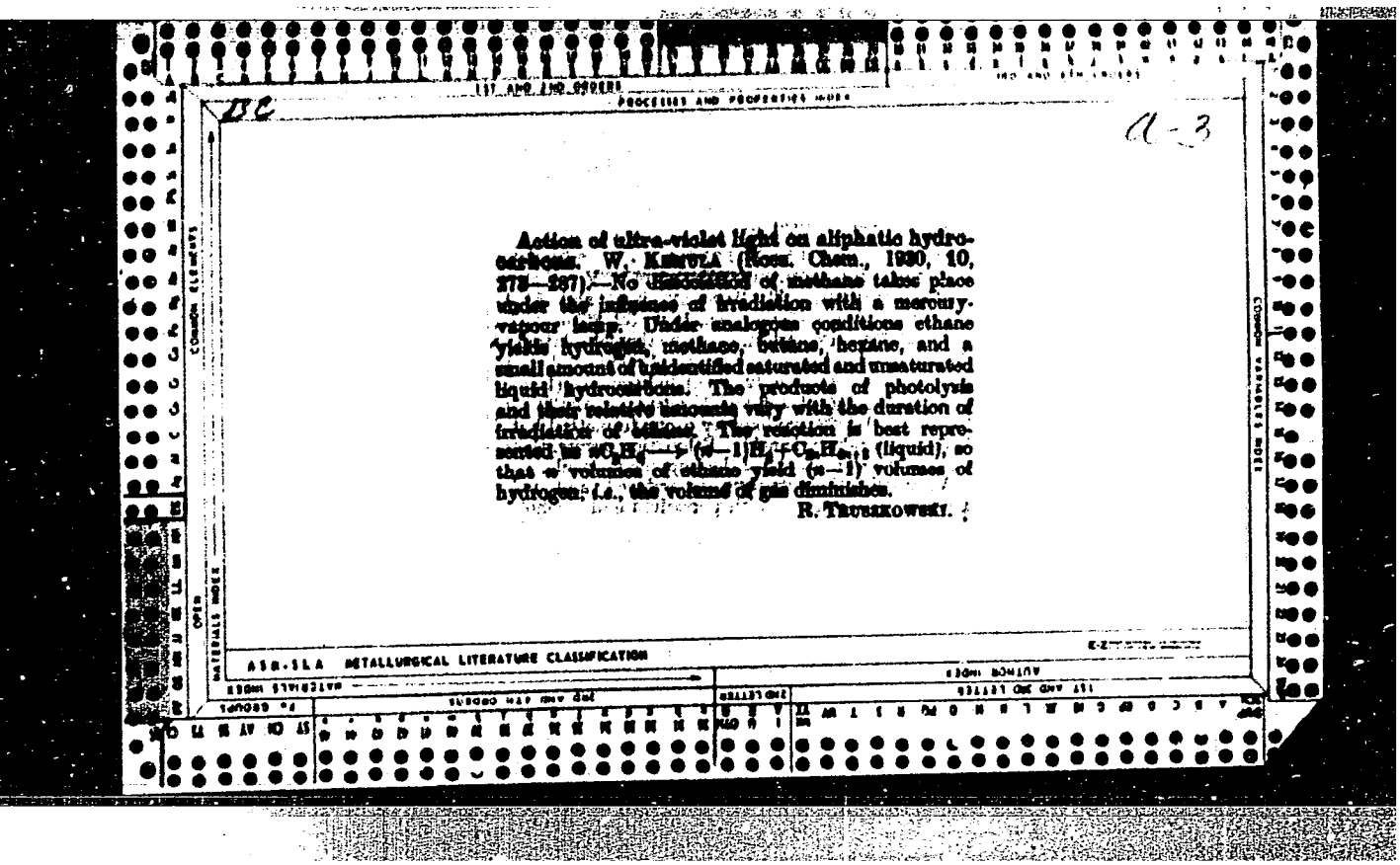

Action of ultra-violet light on aliphatic hydrocarbons. W. KEMULA (Roczn. Chem., 1930, 10, 278—287).—No [illegible] of methane takes place under the influence of irradiation with a mercury-vapour lamp. Under analogous conditions ethane yields hydrogen, methane, butane, hexane, and a small amount of unidentified saturated and unsaturated liquid hydrocarbons. The products of photolysis and their relative amounts vary with the duration of irradiation of ethane. The reaction is best represented by $nC_2H_6 \rightarrow (n-1)H_2 + C_{2n}H_{2n+2}$ (liquid), so that n volumes of ethane yield $(n-1)$ volumes of hydrogen, *i.e.*, the volume of gas diminishes.

R. TRUSZKOWSKI.

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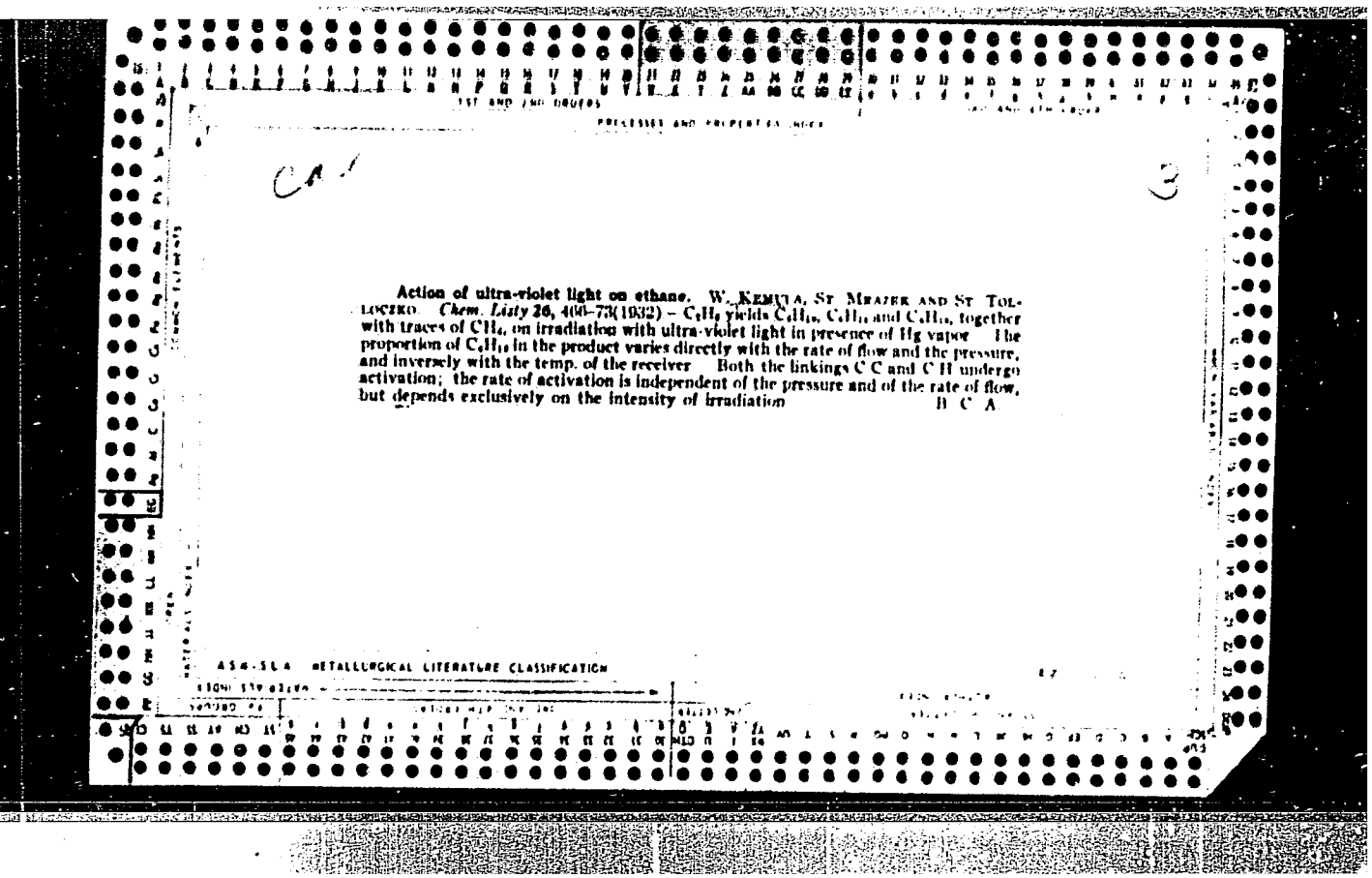

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Action of ultra-violet light on ethane. W. KEMULA, ST. MRAZEK AND ST. TOLLOCZKO. *Chem. Listy* 26, 400–73(1932) – C_2H_6 yields C_4H_{10}, C_4H_8 and C_4H_{12}, together with traces of CH_4, on irradiation with ultra-violet light in presence of Hg vapor. The proportion of C_4H_{10} in the product varies directly with the rate of flow and the pressure, and inversely with the temp. of the receiver. Both the linkings C C and C H undergo activation; the rate of activation is independent of the pressure and of the rate of flow, but depends exclusively on the intensity of irradiation. B. C. A.

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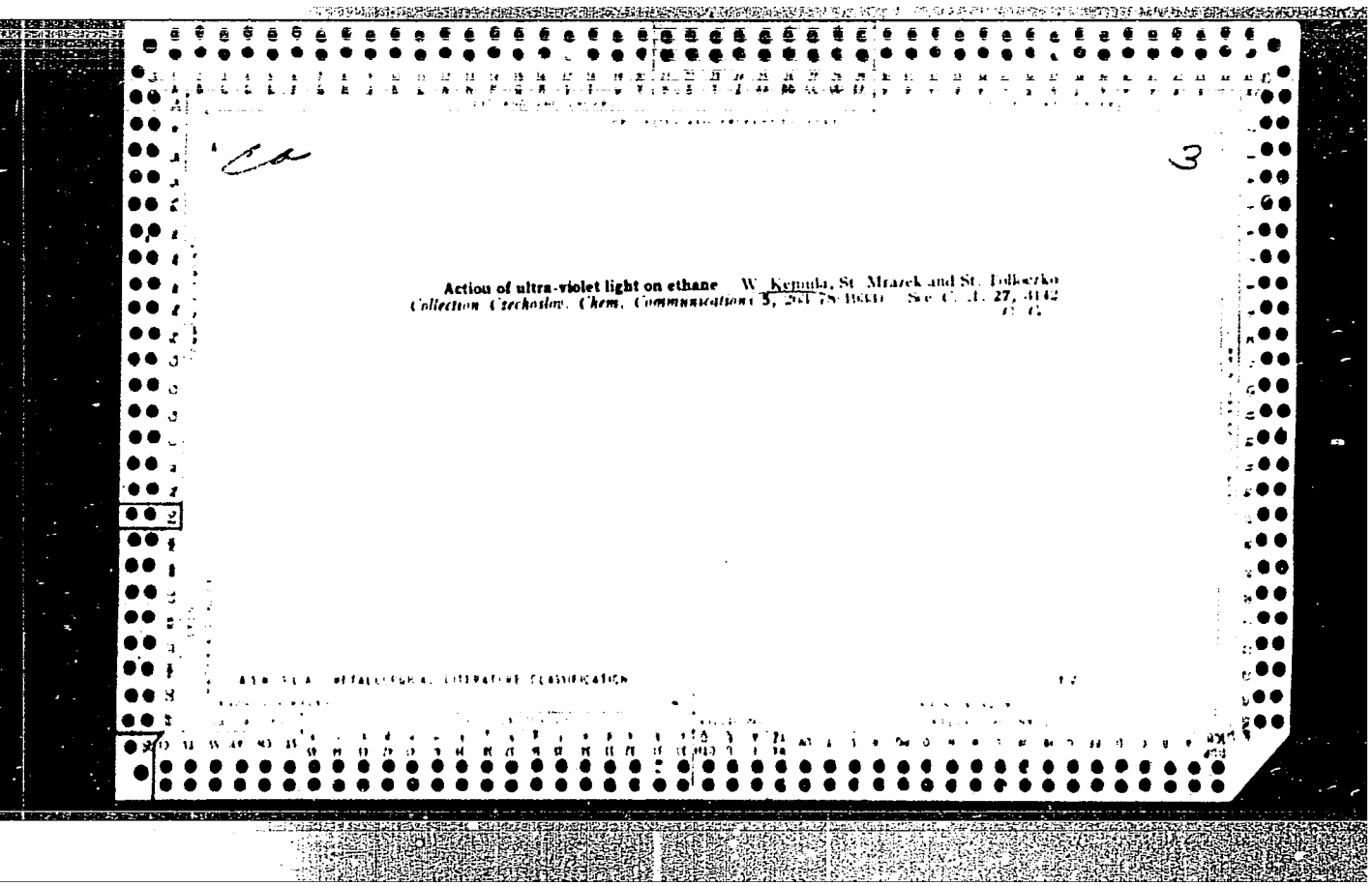

Action of ultra-violet light on ethane W. Kemula, St. Mrazek and St. Tolloczko
Collection Czechoslov. Chem. Communications 5, 264-78 (1933). See C. A. 27, 3142
C. C.

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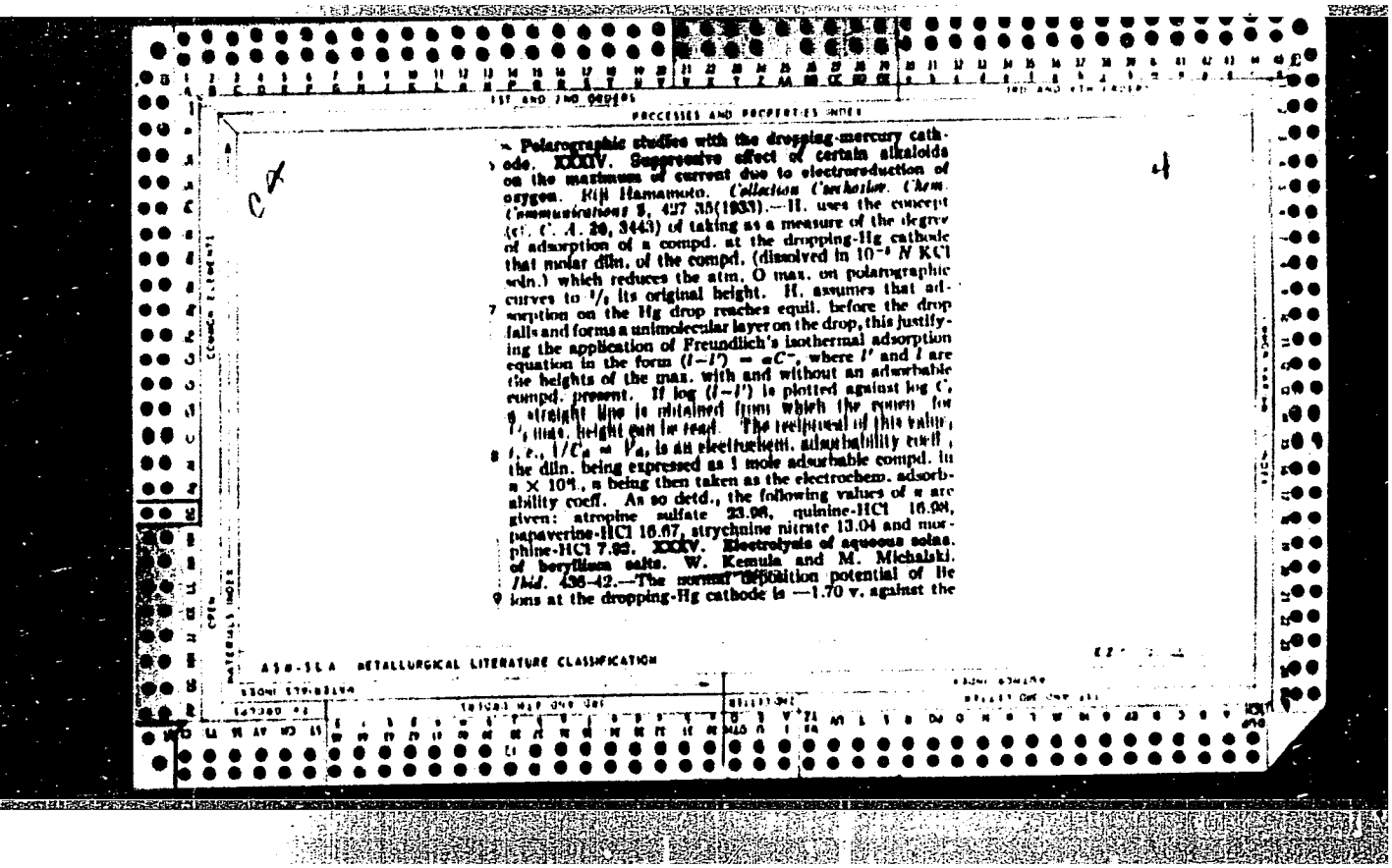

PROCESSES AND PROPERTIES INDEX

Polarographic studies with the dropping-mercury cathode. XXXIV. Suppressive effect of certain alkaloids on the maximum of current due to electroreduction of oxygen. Riji Hamamoto. *Collection Czechoslov. Chem. Communications* 5, 427-35(1933).—H. uses the concept (cf. C. A. 26, 3443) of taking as a measure of the degree of adsorption of a compd. at the dropping-Hg cathode that molar dilu. of the compd. (dissolved in 10^{-4} *N* KCl soln.) which reduces the atm. O max. on polarographic curves to ½ its original height. H. assumes that adsorption on the Hg drop reaches equil. before the drop falls and forms a unimolecular layer on the drop, this justifying the application of Freundlich's isothermal adsorption equation in the form $(I-I') = aC^{-}$, where I' and I are the heights of the max. with and without an adsorbable cmpd. present. If log $(I-I')$ is plotted against log C, a straight line is obtained from which the quan. for ½ max. height can be read. The reciprocal of this value, i.e., $1/C_a = V_a$, is an electrochem. adsorbability coeff., the dilu. being expressed as 1 mole adsorbable compd. in $n \times 10^4$ l., n being then taken as the electrochem. adsorbability coeff. As so detd., the following values of n are given: atropine sulfate 23.98, quinine-HCl 16.98, papaverine-HCl 16.67, strychnine nitrate 13.04 and morphine-HCl 7.82. XXXV. Electrolysis of aqueous solns. of beryllium salts. W. Kemula and M. Michalski. *Ibid.* 436-42.—The normal deposition potential of Be ions at the dropping-Hg cathode is —1.70 v. against the

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N calomel electrode, when measured with a galvanometer of sensitivity 1×10^{-8} amp./mm. Because of hydrolysis, the current-voltage curves of Be salt solns. show an increase due to H deposition before the increase due to Be deposition. Owing to the proximity of the Be and Al deposition potentials (−1.70 v. and −1.66 v., resp.), and their similarity of electrochem. behavior, the joint increase in the current-voltage curve due to the presence of both metals in soln. could not be resolved. XXXVI.

Catalysis of the electrodeposition of hydrogen due to the presence of the platinum metals. P. Herasymenko and I. Slendyk. *Ibid.* 479–90.—The catalytic effect of Pt has been reported previously (cf. *C. A.* **26**, 5854; **27**, 467). Traces of Ru, Rh, Pd, Ir and Pt at the cathode surface produce a considerable decrease in H overvoltage, and they produce, in general, 3 stages in the catalytic deposition of H: (1) at −1.2 v., (2) at −0.9 to −1.00 v. and (3) at −0.5 to −0.7 v. from the *N* calomel zero. The exact values of these potentials depend on the concn. of the catalyst and of H ions. Pt and Pd show only stage 1. The occurrence of the 3 stages of catalyzed H deposition is explained by the formation of 3 types of catalytic centers having different catalytic activities due to aggregation of atoms of catalyst into polyat. complexes at the Hg surface. The total catalytic effect, measured by the sum of the limiting currents of all catalytic stages,

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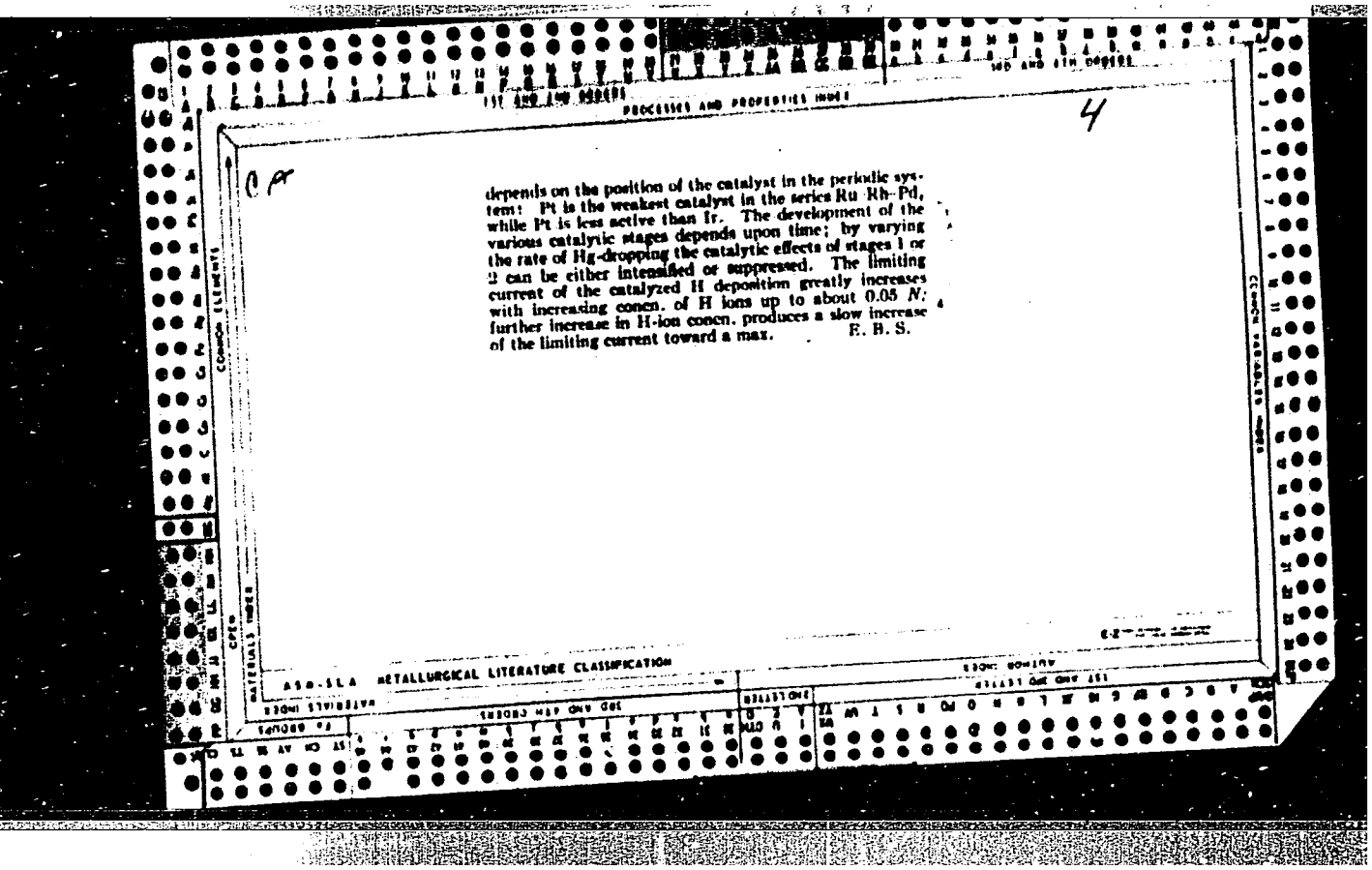

depends on the position of the catalyst in the periodic system: Pt is the weakest catalyst in the series Ru–Rh–Pd, while Pt is less active than Ir. The development of the various catalytic stages depends upon time; by varying the rate of Hg-dropping the catalytic effects of stages 1 or 2 can be either intensified or suppressed. The limiting current of the catalyzed H deposition greatly increases with increasing concn. of H ions up to about 0.05 *N*; further increase in H-ion concn. produces a slow increase of the limiting current toward a max. E. B. S.

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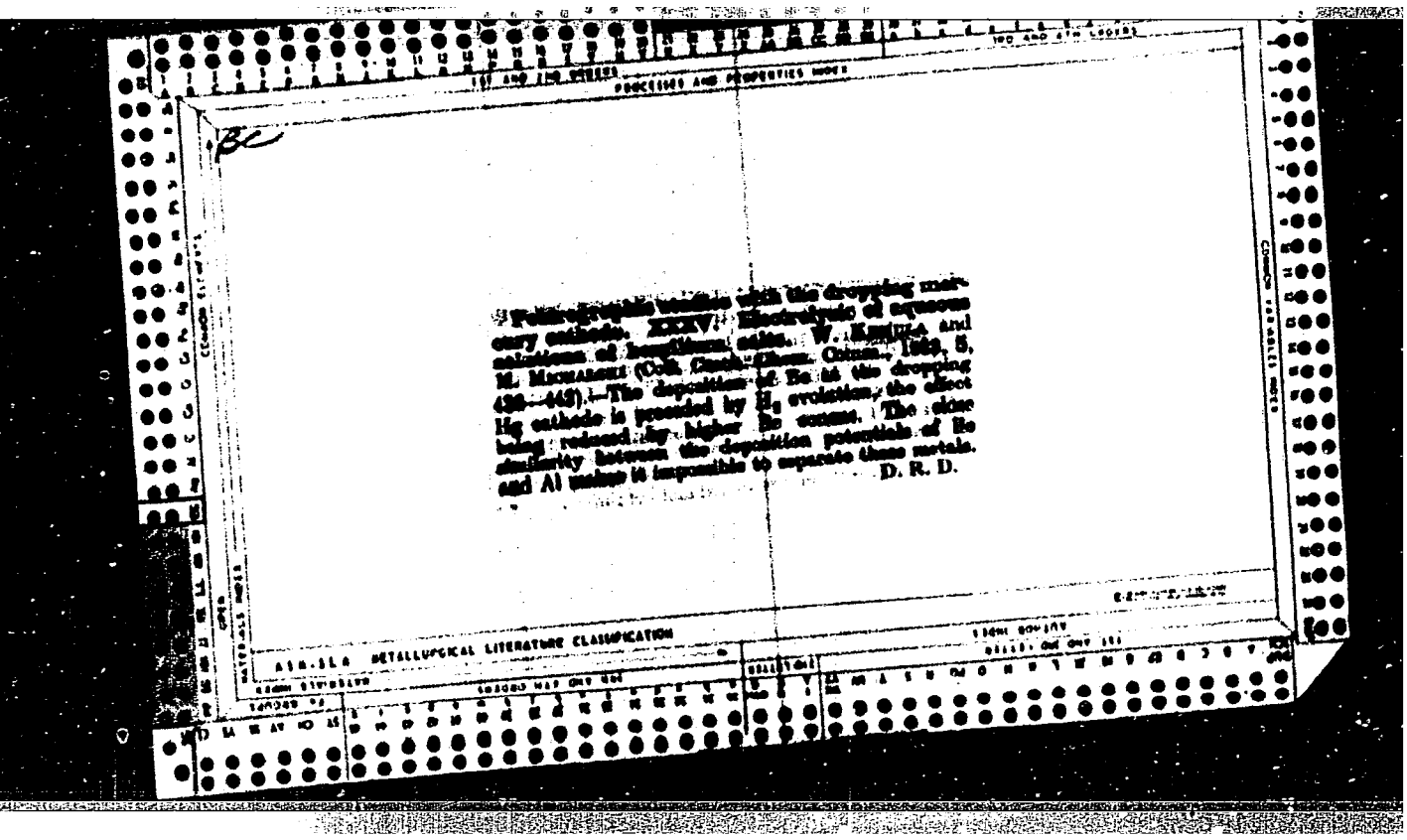

Polarographic behavior with the dropping mercury cathode. XXXV. Electrolysis of aqueous solutions of beryllium salts. W. Kemula and M. Michalski (Coll. Czech. Chem. Comm., 1952, 5, 438–445).—The deposition of Be at the dropping Hg cathode is preceded by H_2 evolution; the effect being reduced by higher Be conens. The close similarity between the deposition potentials of Be and Al makes it impossible to separate these metals.
D. R. D.

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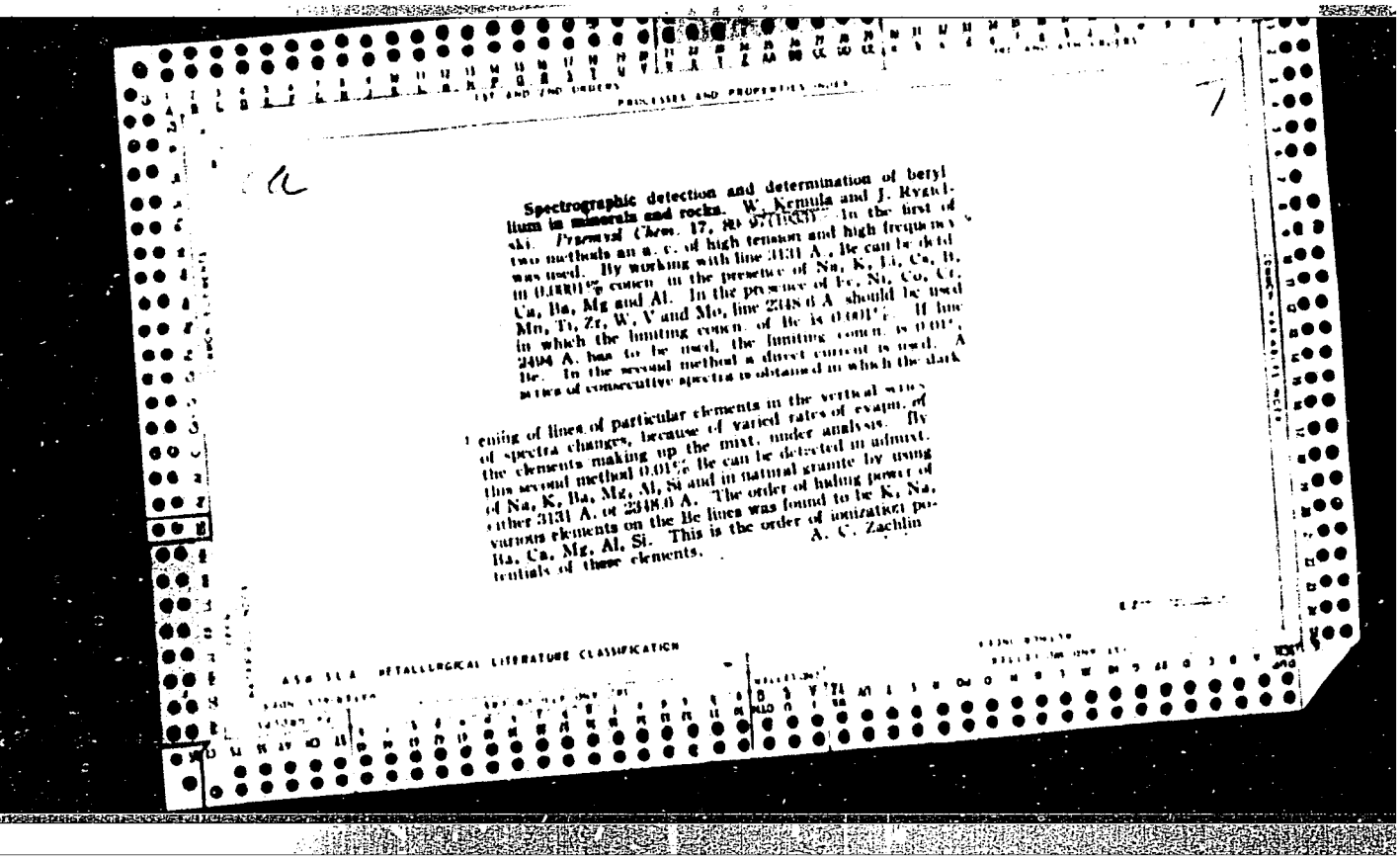

Spectrographic detection and determination of beryllium in minerals and rocks. W. Kemula and J. Rygielski. *Przemysl Chem.* 17, 89-97(1933). In the first of two methods an a. c. of high tension and high frequency was used. By working with line 3131 A., Be can be detected in 0.0001% concn. in the presence of Na, K, Li, Cs, Rb, Ca, Ba, Mg and Al. In the presence of Fe, Ni, Co, Cr, Mn, Ti, Zr, W, V and Mo, line 2348.6 A. should be used in which the limiting concn. of Be is 0.001%. If line 2494 A. has to be used, the limiting concn. is 0.01%. A Be. In the second method a direct current is used. A series of consecutive spectra is obtained in which the dark ening of lines of particular elements in the vertical series of spectra changes, because of varied rates of evapn. of the elements making up the mixt. under analysis. By this second method 0.01% Be can be detected in admixt. of Na, K, Ba, Mg, Al, Si and in natural granite by using either 3131 A. or 2348.6 A. The order of hiding power of various elements on the Be lines was found to be K, Na, Ba, Ca, Mg, Al, Si. This is the order of ionization potentials of these elements.

A. C. Zachlin

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

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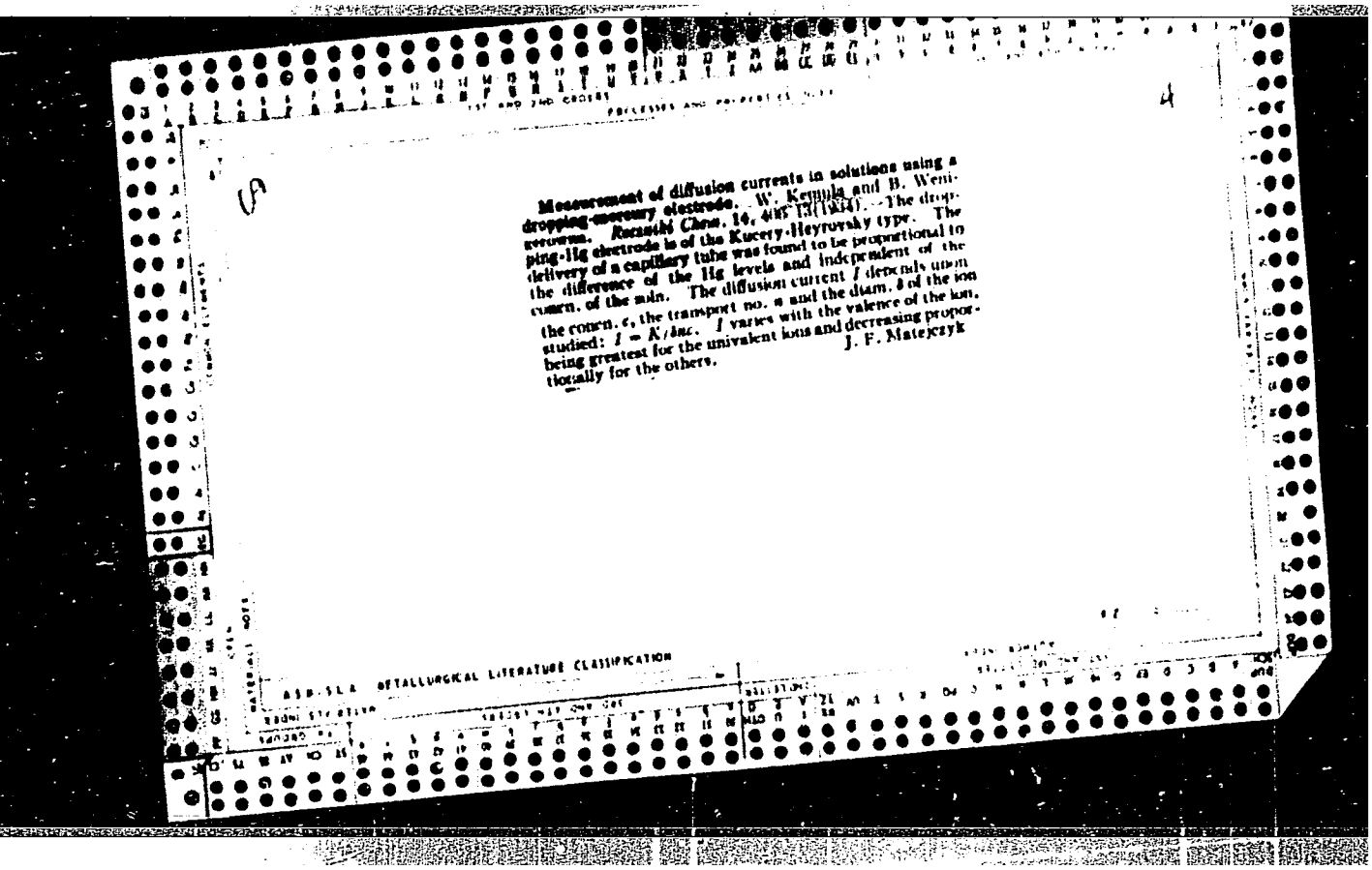
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

4



Measurement of diffusion currents in solutions using a dropping-mercury electrode. W. Kemula and B. Wenigerowna. *Roczniki Chem.* 14, 405-13(1934).—The dropping-Hg electrode is of the Kucery-Heyrovsky type. The delivery of a capillary tube was found to be proportional to the difference of the Hg levels and independent of the concn. of the soln. The diffusion current I depends upon the concn. c, the transport no. n and the diam. δ of the ion studied: $I = K/\delta nc$. I varies with the valence of the ion, being greatest for the univalent ions and decreasing proportionally for the others.

J. F. Matejczyk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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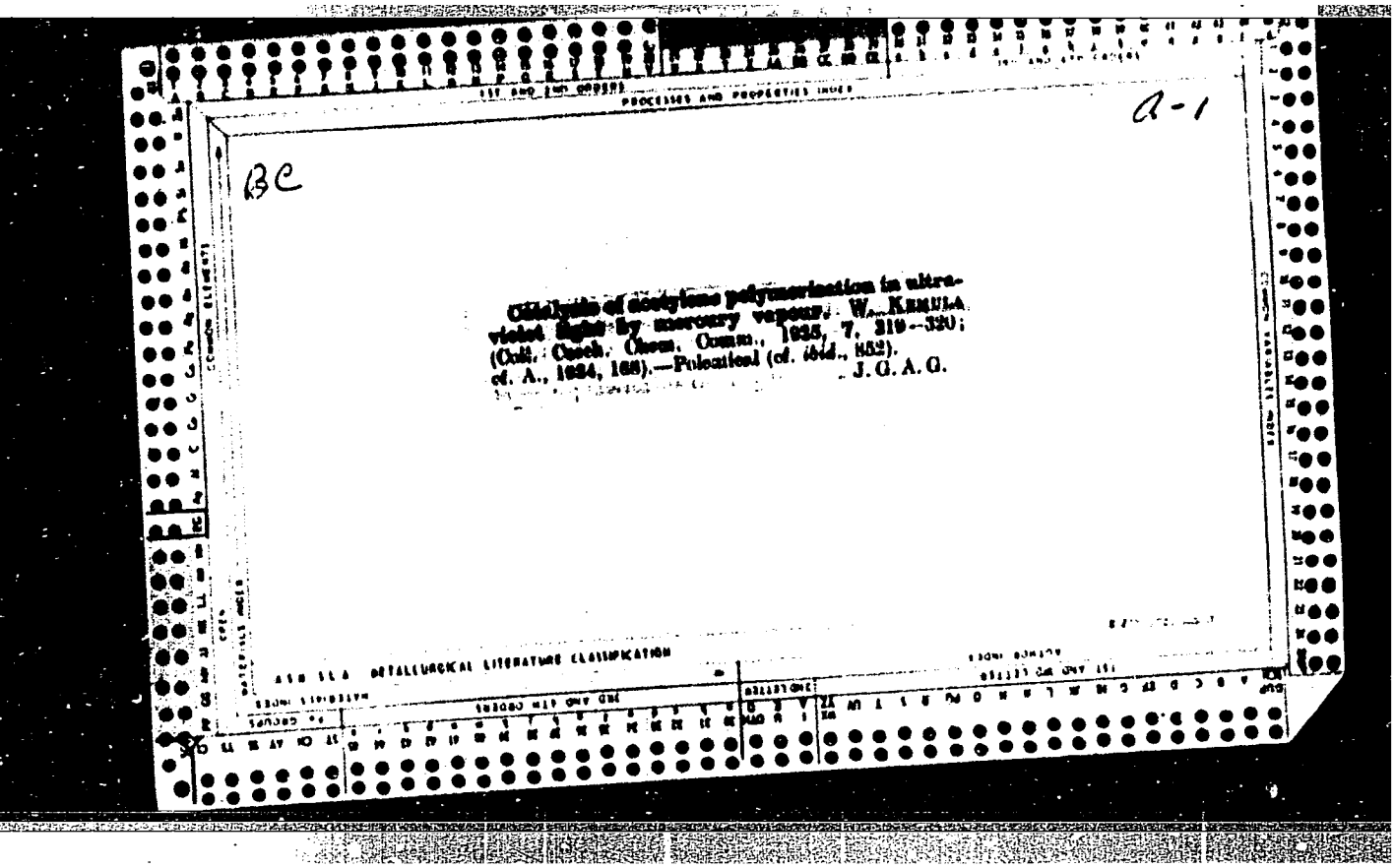

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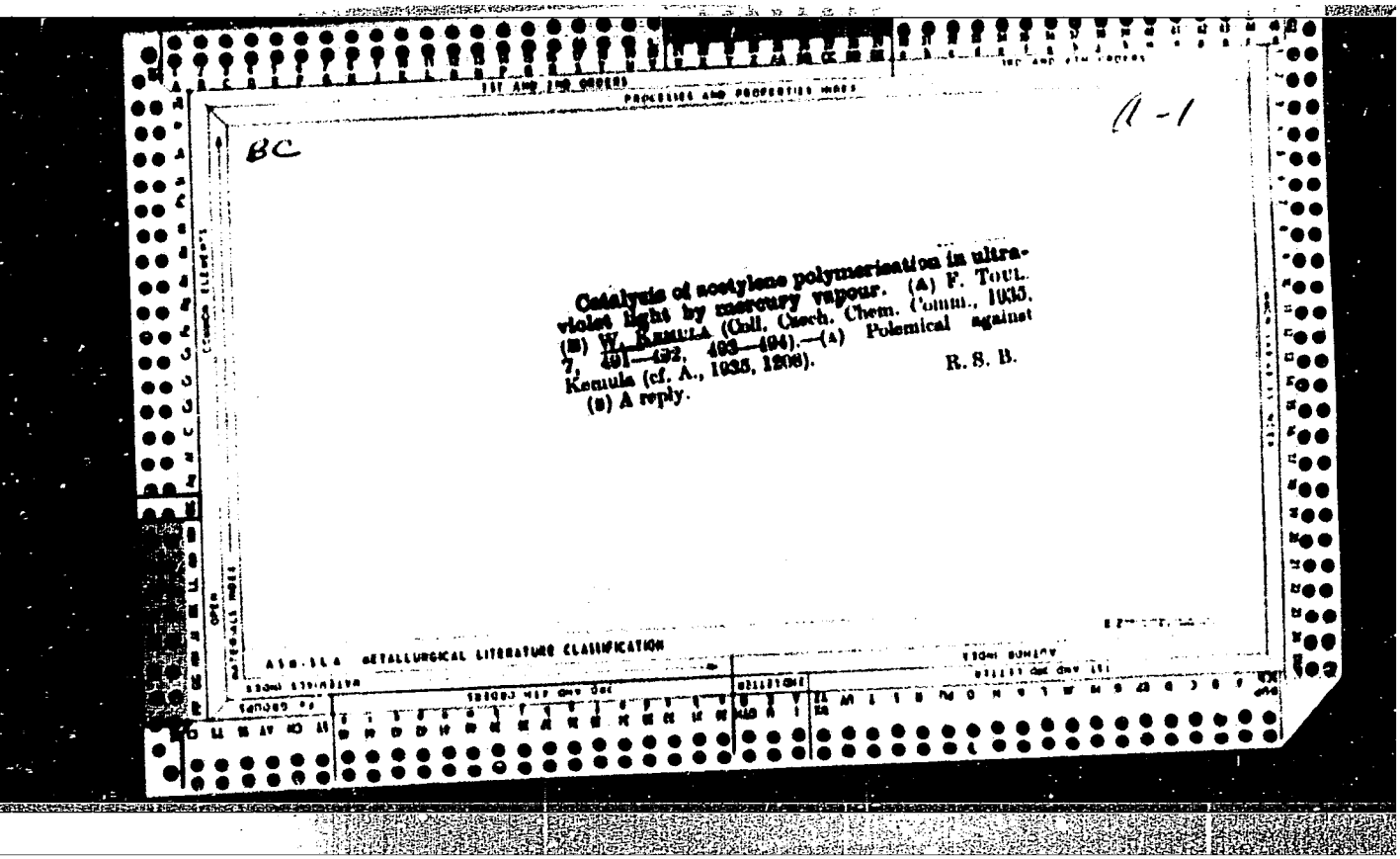

BC

A-1

Catalysis of acetylene polymerisation in ultra-violet light by mercury vapour. (A) F. Toul. (B) W. Kemula (Coll. Czech. Chem. Commun., 1935, 7, 491—492, 493—494).—(A) Polemical against Kemula (cf. A., 1935, 1208).
(B) A reply. R. S. B.

METALLURGICAL LITERATURE CLASSIFICATION

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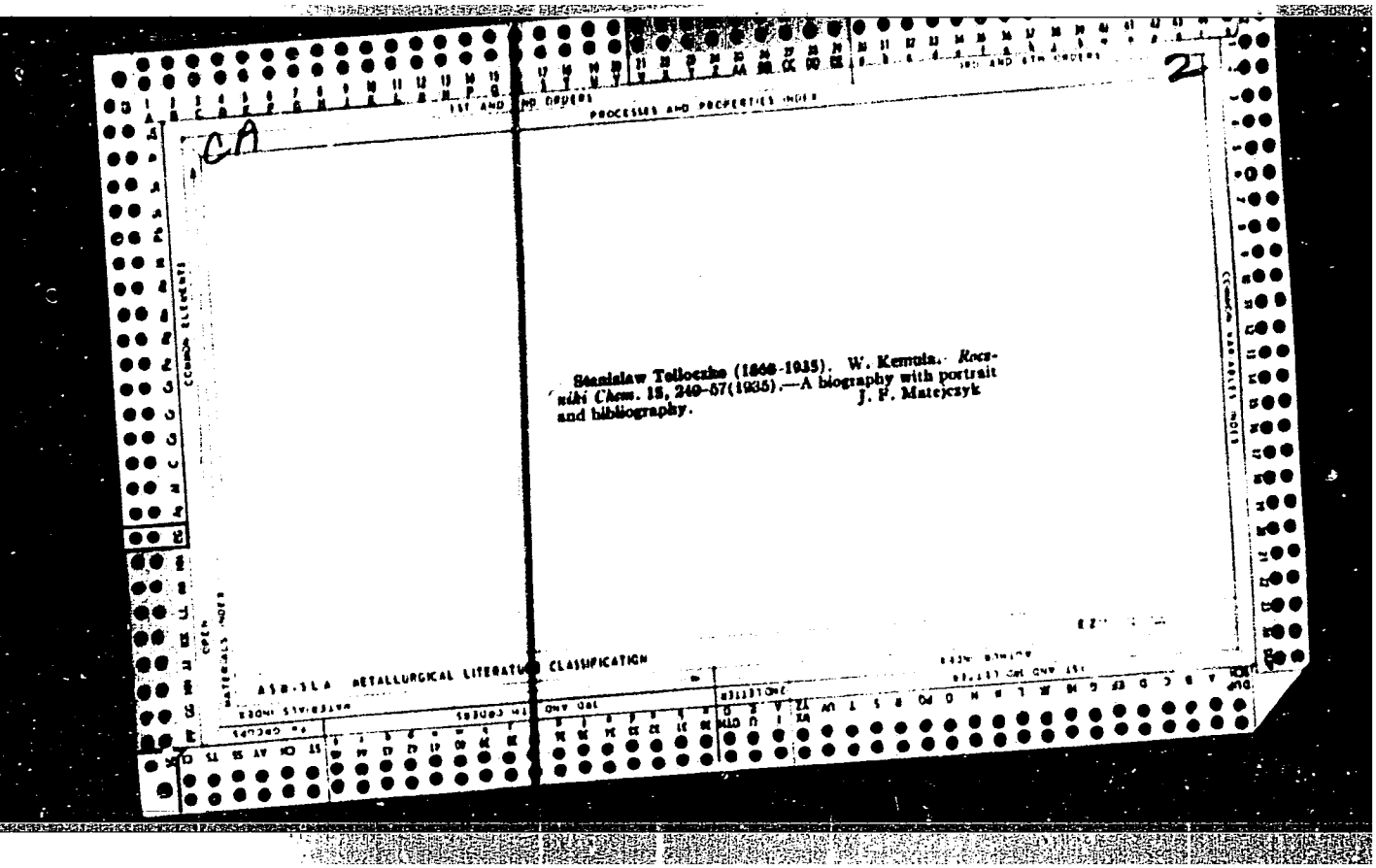

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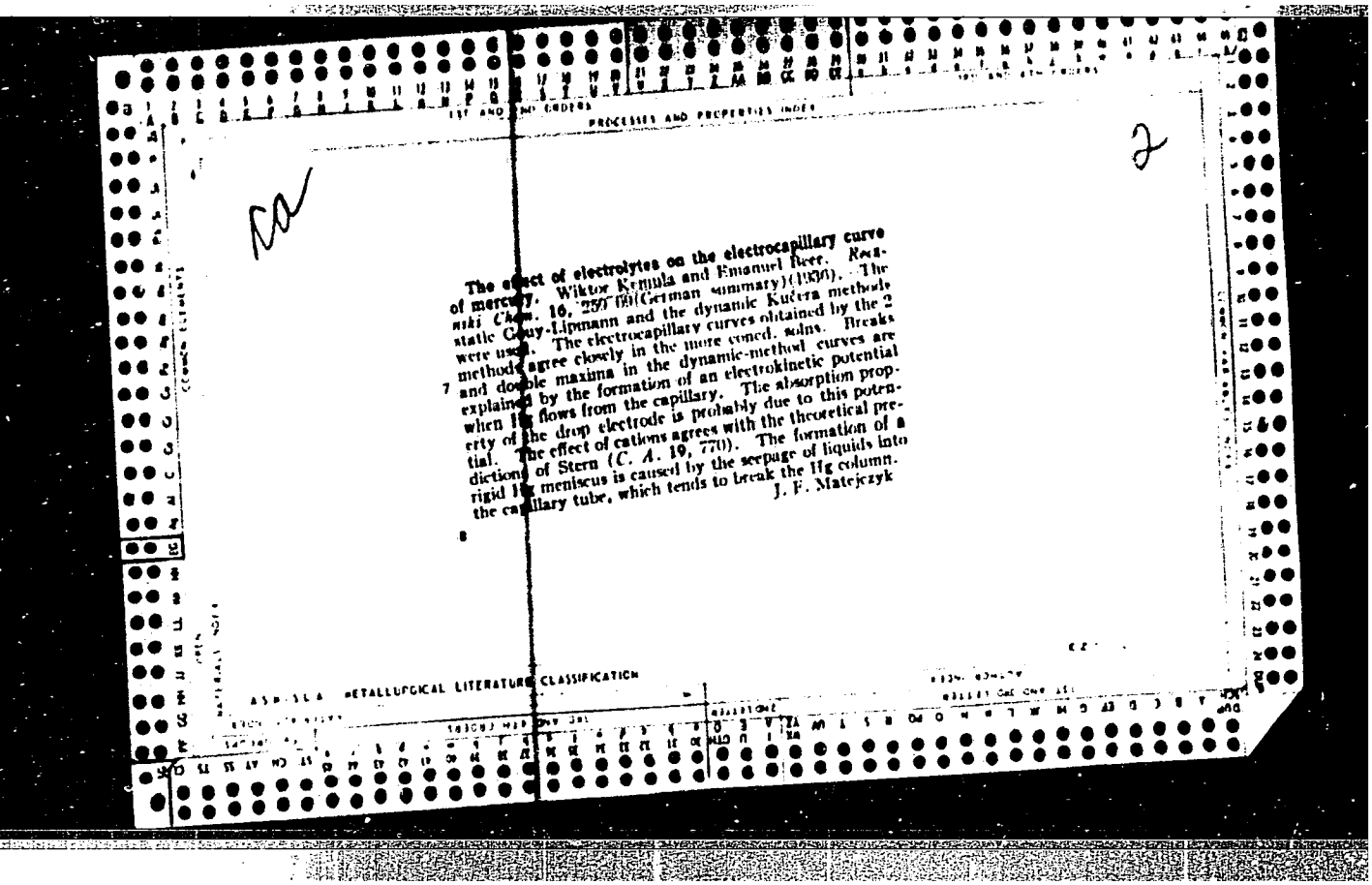

The effect of electrolytes on the electrocapillary curve of mercury. Wiktor Kemula and Emanuel Beer. *Roczniki Chem.* 16, 250-70 (German summary) (1936). The static Gouy-Lippmann and the dynamic Kučera methods were used. The electrocapillary curves obtained by the 2 methods agree closely in the more concd. solns. Breaks and double maxima in the dynamic-method curves are explained by the formation of an electrokinetic potential when Hg flows from the capillary. The absorption property of the drop electrode is probably due to this potential. The effect of cations agrees with the theoretical prediction of Stern (*C. A.* 19, 770). The formation of a rigid Hg meniscus is caused by the seepage of liquids into the capillary tube, which tends to break the Hg column.

J. F. Matejczyk

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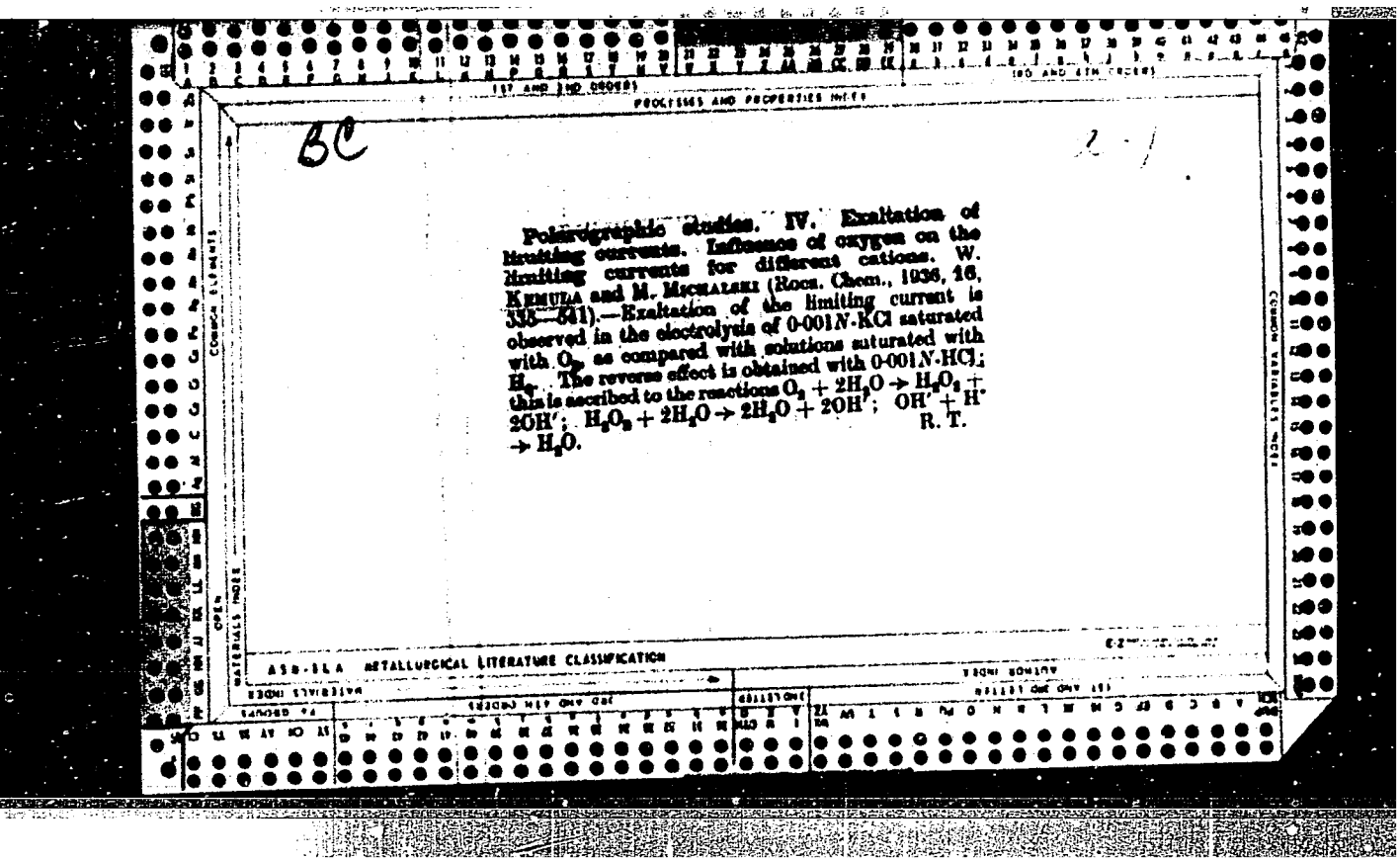

BC

Polarographic studies. IV. Exaltation of limiting currents. Influence of oxygen on the limiting currents for different cations. W. KEMULA and M. MICHALSKI (Roczn. Chem., 1936, 16, 538—541).—Exaltation of the limiting current is observed in the electrolysis of 0·001*N*-KCl saturated with O_2, as compared with solutions saturated with H_2. The reverse effect is obtained with 0·001*N*-HCl; this is ascribed to the reactions $O_2 + 2H_2O \rightarrow H_2O_2 + 2OH'$; $H_2O_2 + 2H_2O \rightarrow 2H_2O + 2OH'$; $OH' + H^{\cdot} \rightarrow H_2O$. R. T.

ASB-ELA METALLURGICAL LITERATURE CLASSIFICATION

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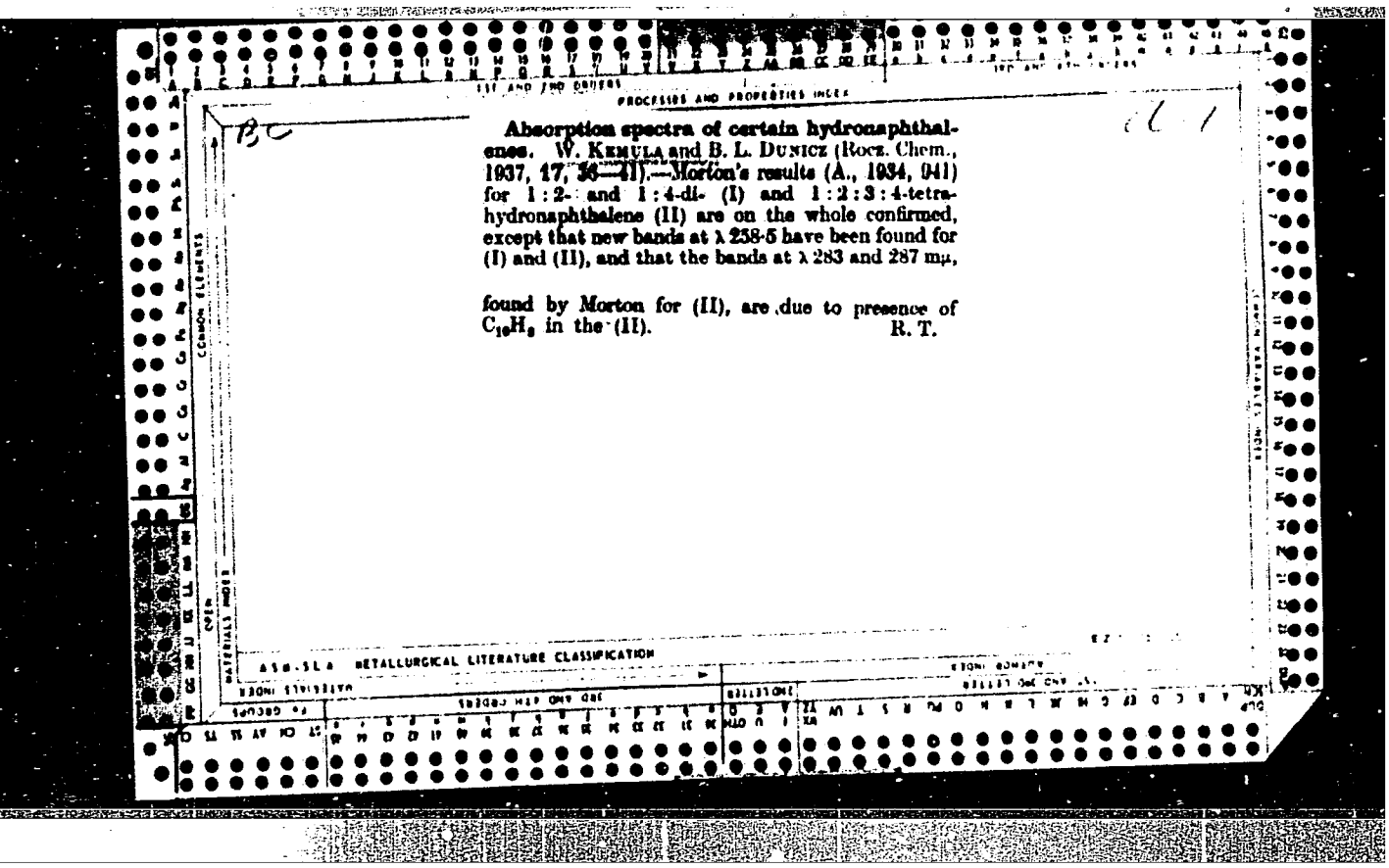

PROCESSES AND PROPERTIES INDEX

BC

Absorption spectra of certain hydronaphthalenes. W. KEMULA and B. L. DUNICZ (Roczn. Chem., 1937, 17, 36—41).—Morton's results (A., 1934, 941) for 1 : 2- and 1 : 4-di- (I) and 1 : 2 : 3 : 4-tetrahydronaphthalene (II) are on the whole confirmed, except that new bands at λ 258·5 have been found for (I) and (II), and that the bands at λ 283 and 287 mμ, found by Morton for (II), are due to presence of $C_{10}H_8$ in the (II). R. T.

C 1

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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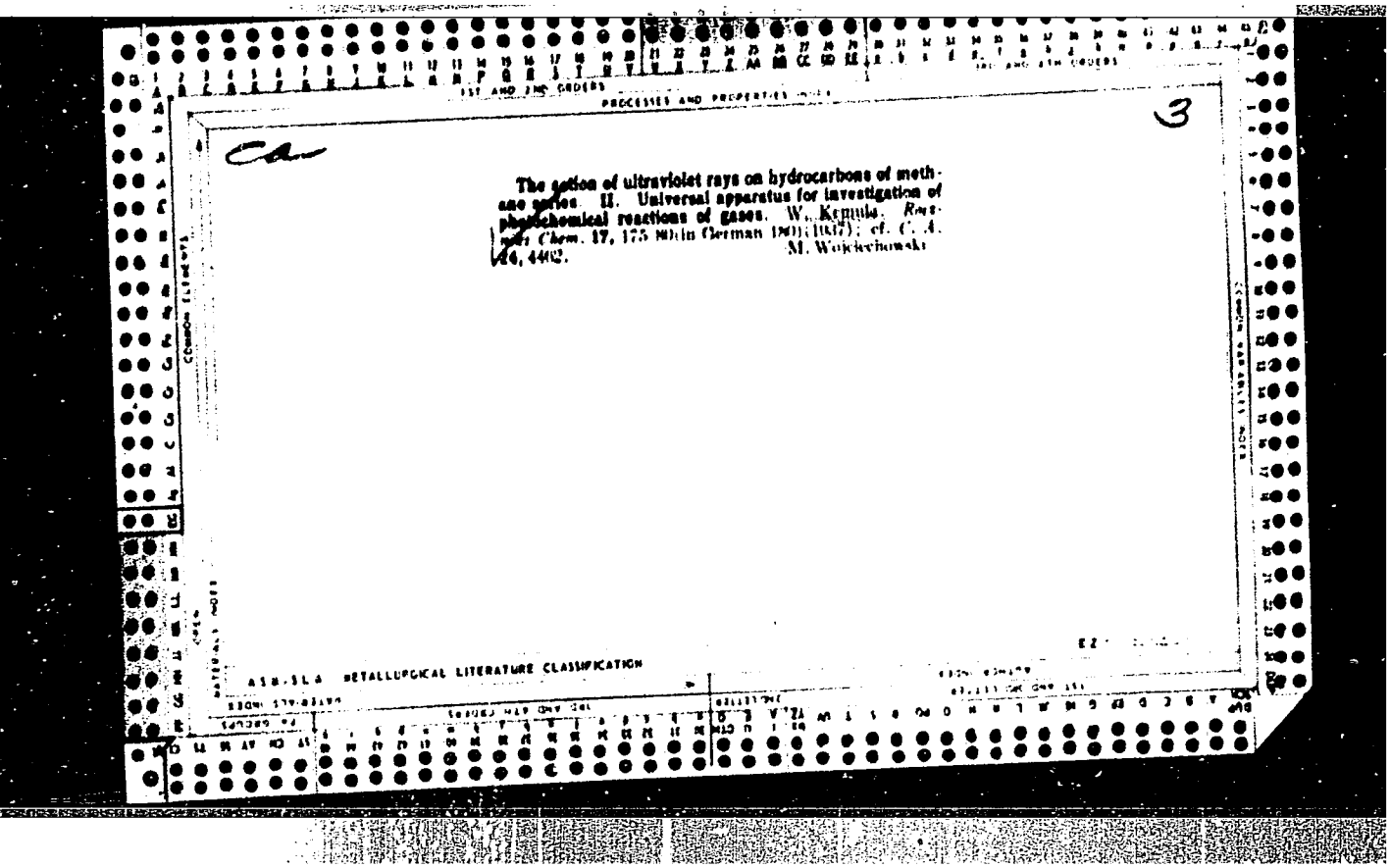
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX



3

Ca

The action of ultraviolet rays on hydrocarbons of methane series. II. Universal apparatus for investigation of photochemical reactions of gases. W. Kemula. *Roczniki Chem.* 17, 175-80 (in German 180) (1937); cf. C. A. 24, 4402.

M. Wojciechowski

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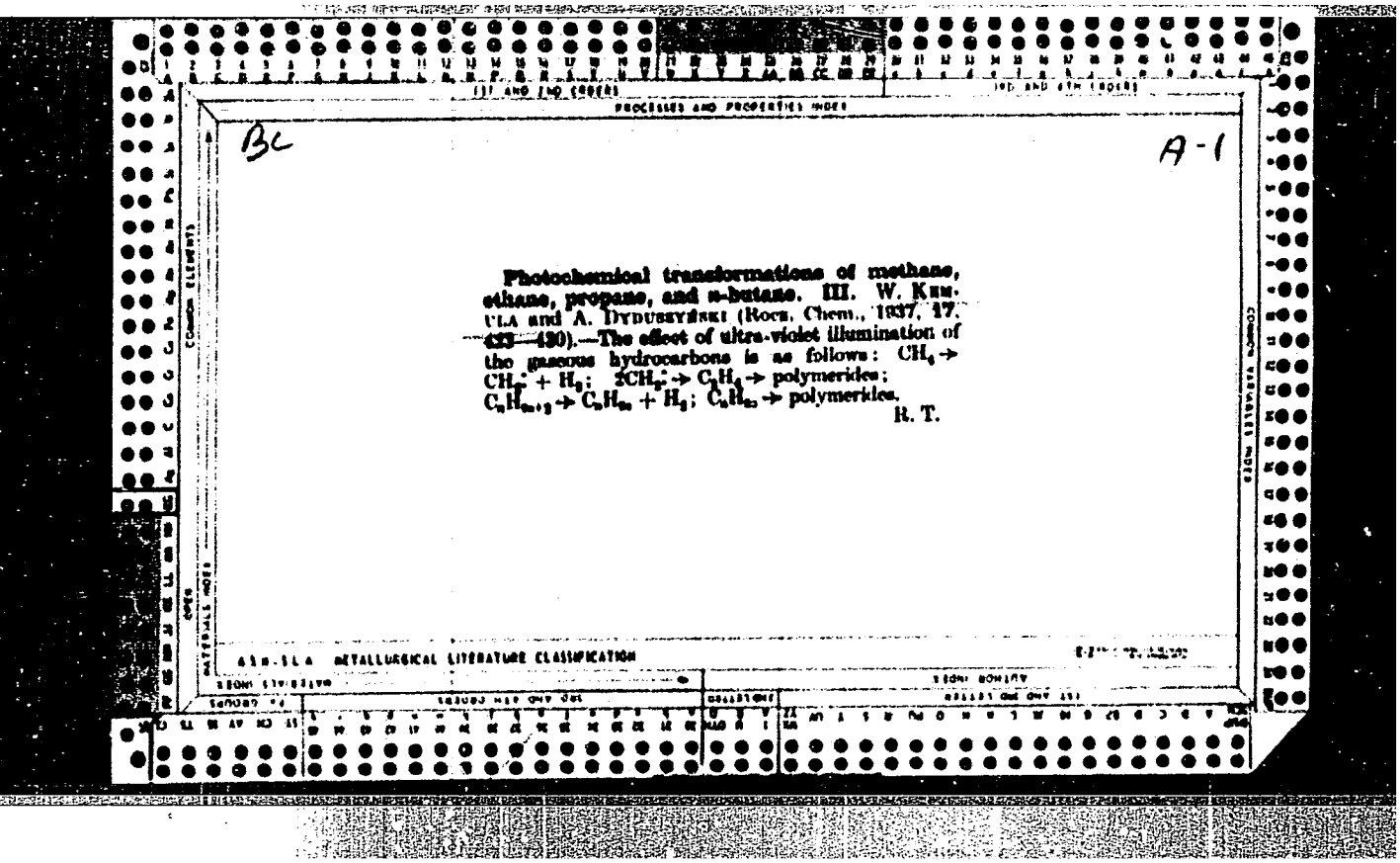
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS



BC

A-1

Photochemical transformations of methane, ethane, propane, and n-butane. III. W. Kemula and A. Dyduszyński (Roczn. Chem., 1937, 17, 423—430).—The effect of ultra-violet illumination of the gaseous hydrocarbons is as follows: $CH_4 \rightarrow CH_2^{\cdot} + H_2$; $2CH_2^{\cdot} \rightarrow C_2H_4 \rightarrow$ polymerides; $C_nH_{2n+2} \rightarrow C_nH_{2n} + H_2$; $C_nH_{2n} \rightarrow$ polymerides.

R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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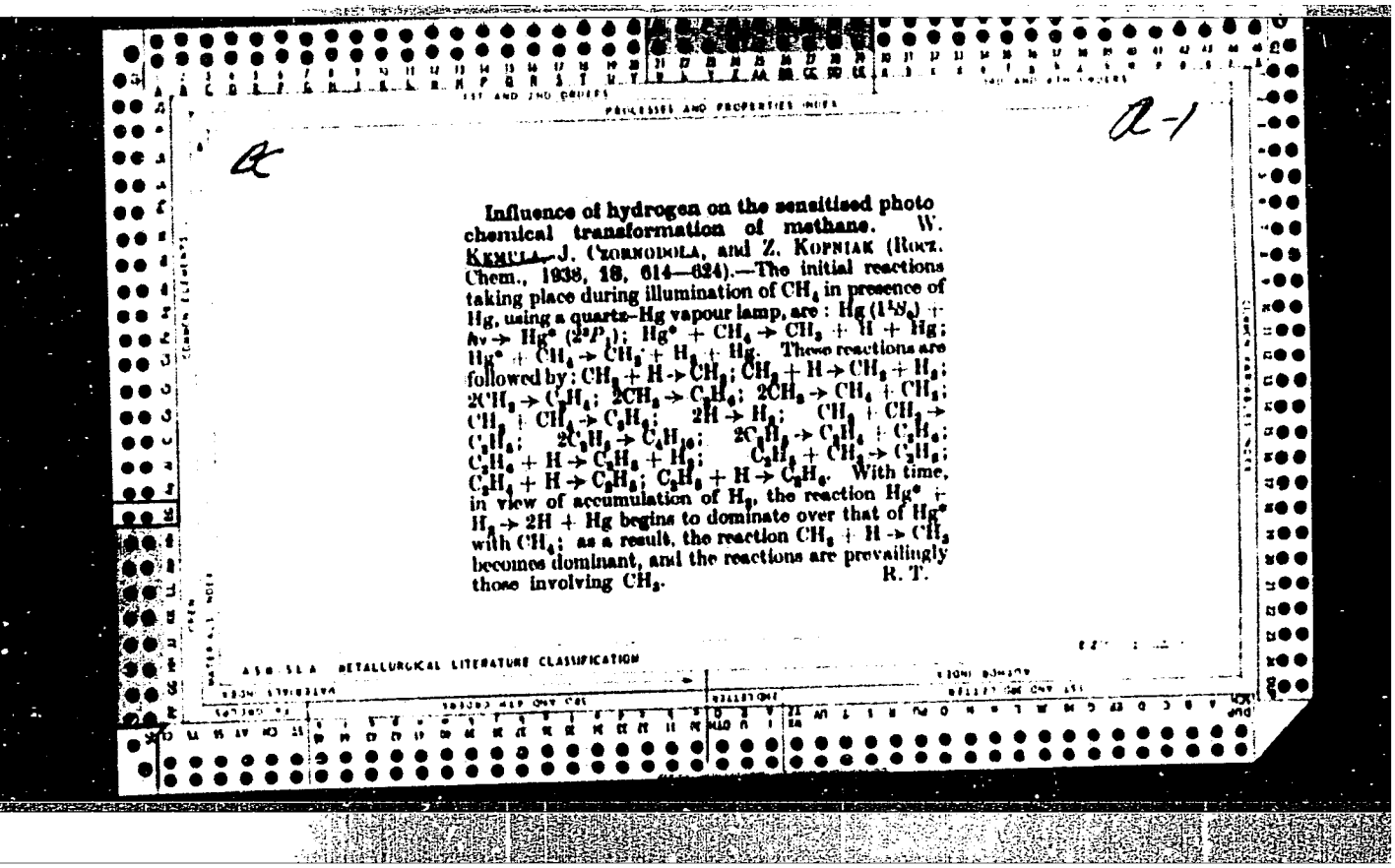

a

a-1

Influence of hydrogen on the sensitised photochemical transformation of methane. W. KEMULA, J. CHORNODOLA, and Z. KOPNIAK (Roczn. Chem., 1938, **18**, 614—624).—The initial reactions taking place during illumination of CH_4 in presence of Hg, using a quartz–Hg vapour lamp, are: $Hg(1^1S_0) + h\nu \rightarrow Hg^*(2^3P_1)$; $Hg^* + CH_4 \rightarrow CH_3 + H + Hg$; $Hg^* + CH_4 \rightarrow CH_3 + H_2 + Hg$. These reactions are followed by: $CH_3 + H \rightarrow CH_4$; $CH_3 + H \rightarrow CH_2 + H_2$; $2CH_3 \rightarrow C_2H_6$; $2CH_3 \rightarrow C_2H_4$; $2CH_3 \rightarrow CH_4 + CH_2$; $CH_3 + CH_4 \rightarrow C_2H_6$; $2H \rightarrow H_2$; $CH_3 + CH_2 \rightarrow C_2H_5$; $2C_2H_5 \rightarrow C_4H_{10}$; $2C_2H_5 \rightarrow C_2H_4 + C_2H_6$; $C_2H_5 + H \rightarrow C_2H_6 + H_2$; $C_2H_5 + CH_3 \rightarrow C_3H_8$; $C_2H_4 + H \rightarrow C_2H_5 + H_2$; $C_2H_5 + H \rightarrow C_2H_6$. With time, in view of accumulation of H_2, the reaction $Hg^* + H_2 \rightarrow 2H + Hg$ begins to dominate over that of Hg^* with CH_4; as a result, the reaction $CH_3 + H \rightarrow CH_4$ becomes dominant, and the reactions are prevailingly those involving CH_3. R. T.

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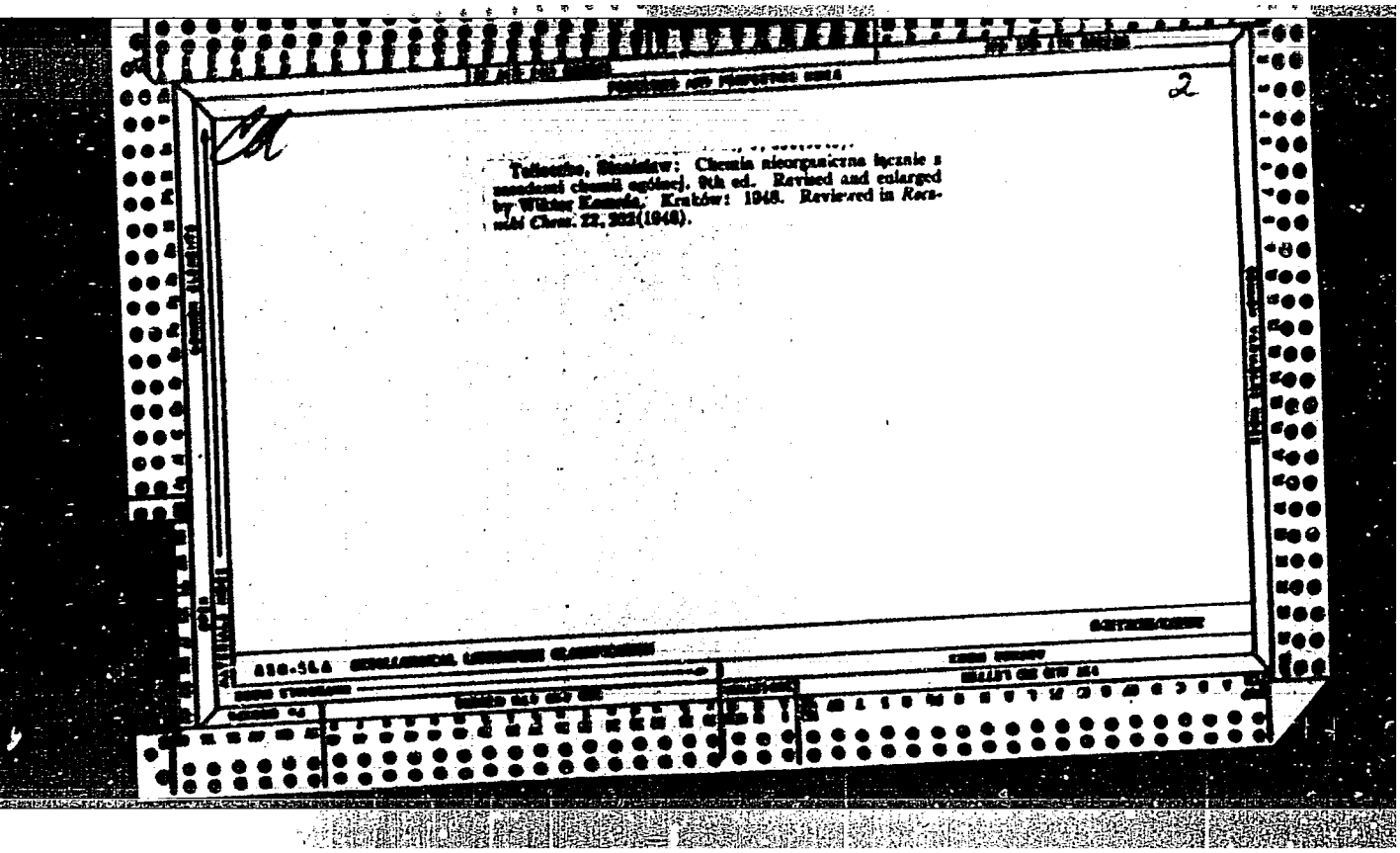

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721520003-1

Kamula W.

Kamula W. and Michalski M. "Schematic Arrangements of the 'Interrupted Arc' as a Source of Emission in Spectra Analysis." (Schematy urzadzen luku przerywanego jako zrodla emisji w analizie spektralnej). Przemysl Chemiczny, No. 5, 1950, pp. 282-288, 5 figs.

Advantages of the "interrupted arc" are emphasized in comparison with other methods of exciting the emission of characteristic radiation in spectral analysis. Testing and improving the method applied by Pfeilsticker led to the construction of an installation nourished only by alternating current (needing no current switches), by means of which 100 separate discharges per sec. between the electrodes were obtained. The advantages of this installation consist in: greater intensity of discharges, increasing the sensibility of detecting elements with characteristic spark spectra, such as arsenium, phosphorus, carbon etc. There is also a possibility of quantitative spectral analysis. Schematic drawings of installations are included.

SO: Polish Technical Abstracts - No. 2, 1951

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CA

3

The "interrupted arc" as a source of light in spectral analysis. W. Kemula and M. Michalski. *Przemysl Chem.* 6(29), 282–8(1950).—The various systems of the "interrupted arc" are described. The wire diagram described by Pfeilsticker (*Z. Elektrochem.* 43, 719(1937); *Z. Metallkunde* 30, 211(1938)) is improved upon to give greater intensity and stability of discharge. The possibility of detecting the spectra of As, P, and C are thus increased.

Frank Gonet

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CA

7

Polarometric determination of oxygen. W. Kemula and S. Siekierski (Warsaw Univ.). *Collection Czechoslov. Chem. Communs.* 15, 1069–75(1950)(in English).—The reduction of O at the dropping-Hg electrode produces OH^- which can be titrated amperometrically with standard HCl or with NaOAc-HOAc buffer of pH 5.1. In either case the titration is made at $E_{d.e.} = -1.8$ v. vs. S.C.E. and the vol. of reagent consumed is proportional to the amount of O present. With HCl the const. of porportionality changes with changing concn. of supporting electrolyte, because of changes in the diffusion coeff. of H^+, but with the OAc^- buffer the results are independent of changes in soln. compn. For *detg. dissolved O in water* the sample is neutralized to pH 5.1 to remove carbonates, then titrated with 0.04 *M* HOAc – 0.12 *M* NaOAc. Results agree with those of the Winkler method with an av. diff. of ±0.8%.

Louis Meites

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CA

Experimental demonstration of the hydroxyl-ion formation during the polarographic reduction of oxygen. W. Kemula and Z. R. Grabowski (Warsaw Univ.). *Collection Czechoslov. Chem. Communs.* 15, 1085-90(1950)(in English).—In neutral or weakly acid solns. contg. phenolphthalein, a pink color due to the formation of OH^- appears around the dropping electrode at potentials at which O is reduced. Similar phenomena occur during the reduction of H_2O_2, NO_3^-, BrO_3^-, and some org. compds. When Cd^{++} or La^{+++} solns. contg. O were electrolyzed, a ppt. of the metal hydroxide appeared as a "collar" on the tip of the capillary around the drop. Louis Meites

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CA

2

Limiting currents of hydrogen in acetate buffer solutions. W. Kemula and J. Chodkowski (Warsaw Univ.). *Collection Czechoslov. Chem. Communs.* 15, 1001–1108(1951) (in English).—The limiting current of H_2 in an O_2-free NaOAc-HOAc buffer in the absence of supporting electrolyte is proportional to the HOAc concn. and hence is governed by the diffusion of HOAc mols. An excess of supporting electrolyte exerts no suppressive effect on the H_2 wave. The diffusion coeff. for HOAc is 4.4×10^{-6} cm.^{2} sec.$^{-1}$ for 0.004 *M* HOAc in 0.8 *M* LiCl and 3.0×10^{-6} cm.^{2} sec.$^{-1}$ for 0.005 *M* HOAc in 0.005 *M* NaOAc, both at 20°.

B. P. Block

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CA

Movements of the dropping mercury electrode and of the electrolyte in the oscillopolarographic measurements. Wiktor Kemula and Barbara Behr (Univ. Warsaw, Poland). *Roczniki Chem.* 25, 223-34(1951).—The dropping-Hg electrode was polarized by a periodically changing current. Over a large range of frequencies the dropping of Hg was irregular and the drops pulsated strongly. At low frequencies the pulsations were synchronized with the voltage changes of the polarizing current. The lifetime of the Hg drop depended on the frequency of the applied voltage, showing discontinuities at some frequencies. By adding pond. charcoal to the soln., appreciable stirring of the electrolyte near the electrode was observed. Thus the theory of polarography cannot be used as a basis of oscillopolarographic measurements. A new theory is needed. I. Z. R.

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KEMULA, VIKTOR

Poland CA: 47:12043

with SLAWOMIR SIEKIERSKI

Univ. Warsaw, Poland

"Dropping mercury electrode with regulated drop time."

Roczniki Chem. 26, 123-33 (1952) (English summary).

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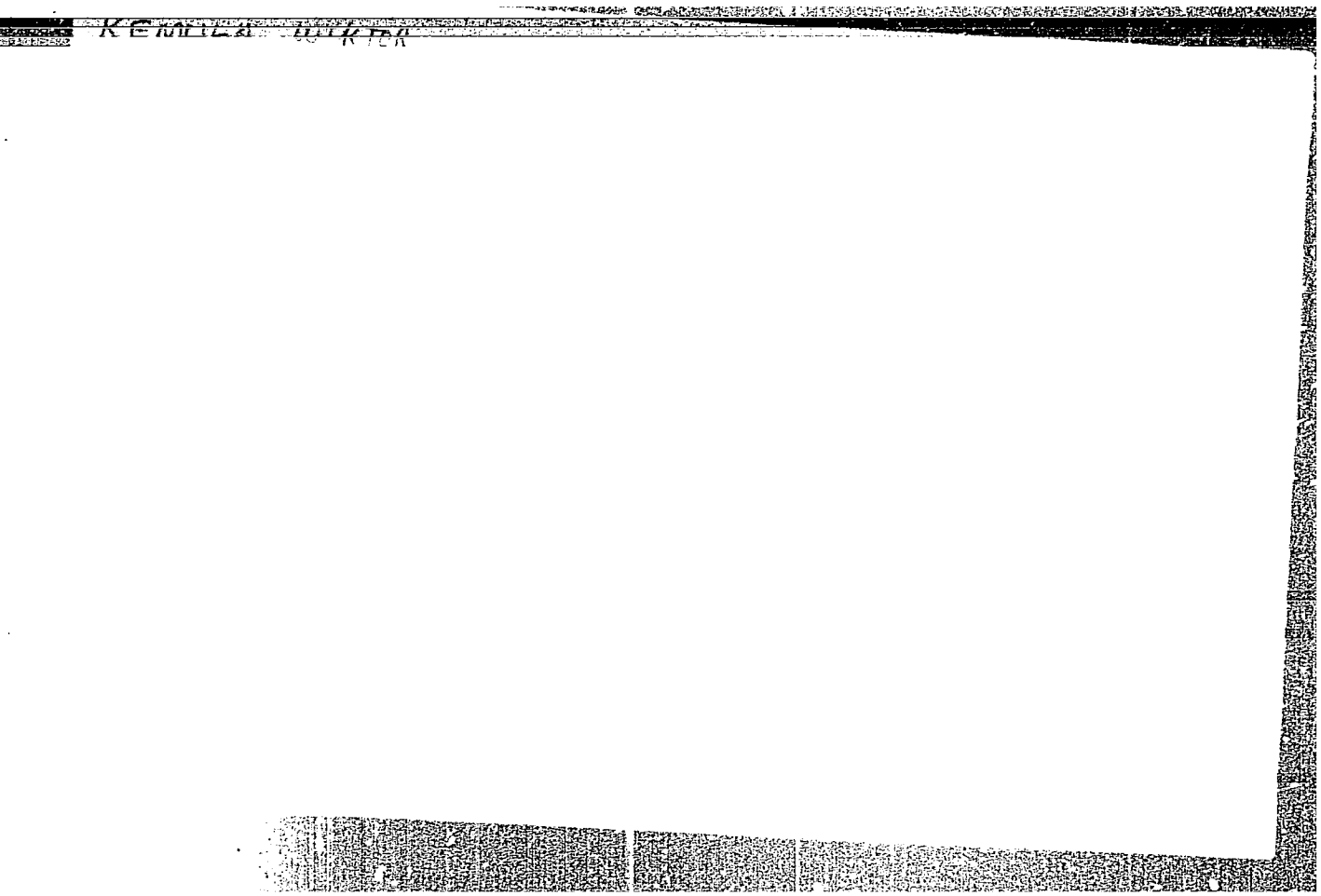

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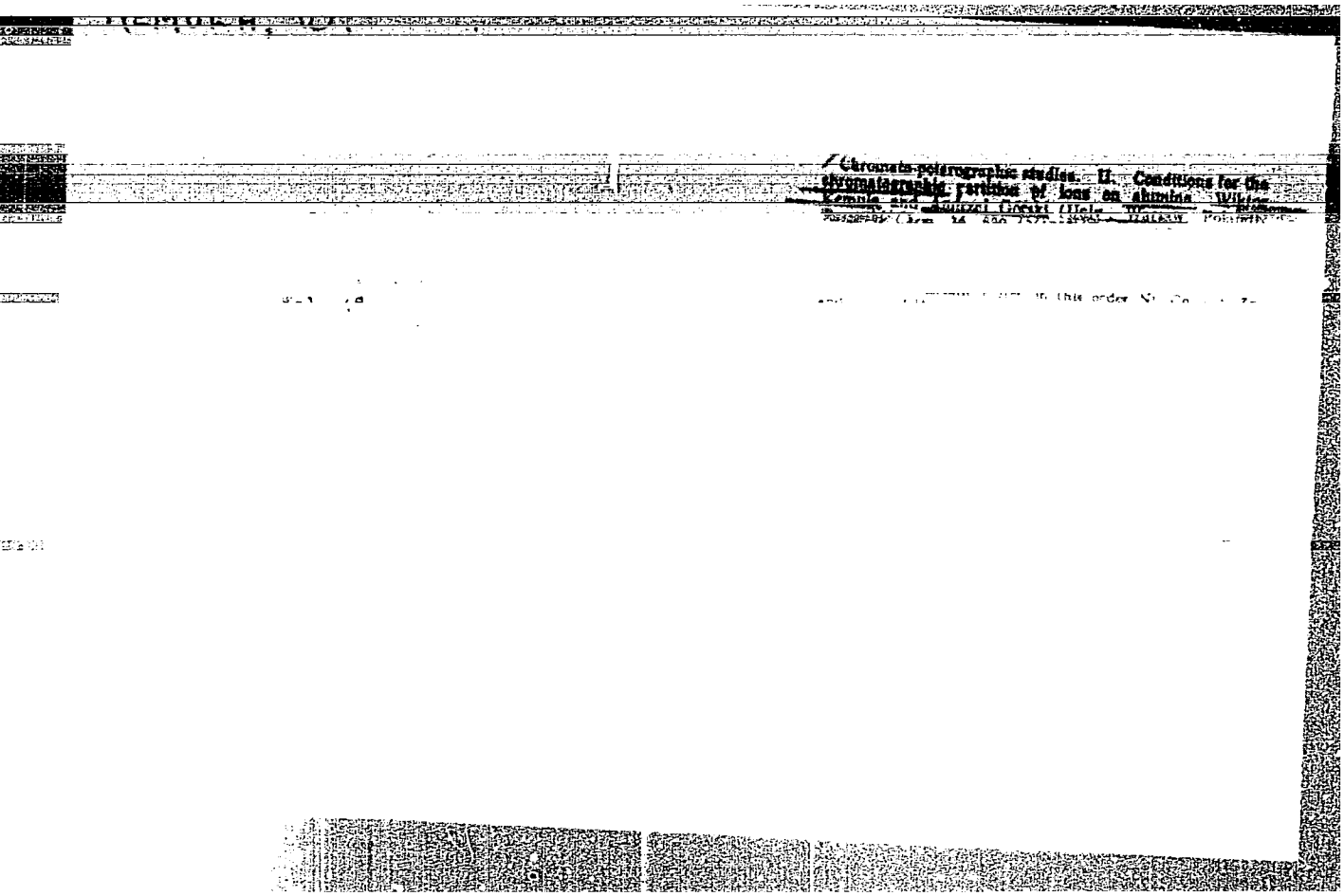

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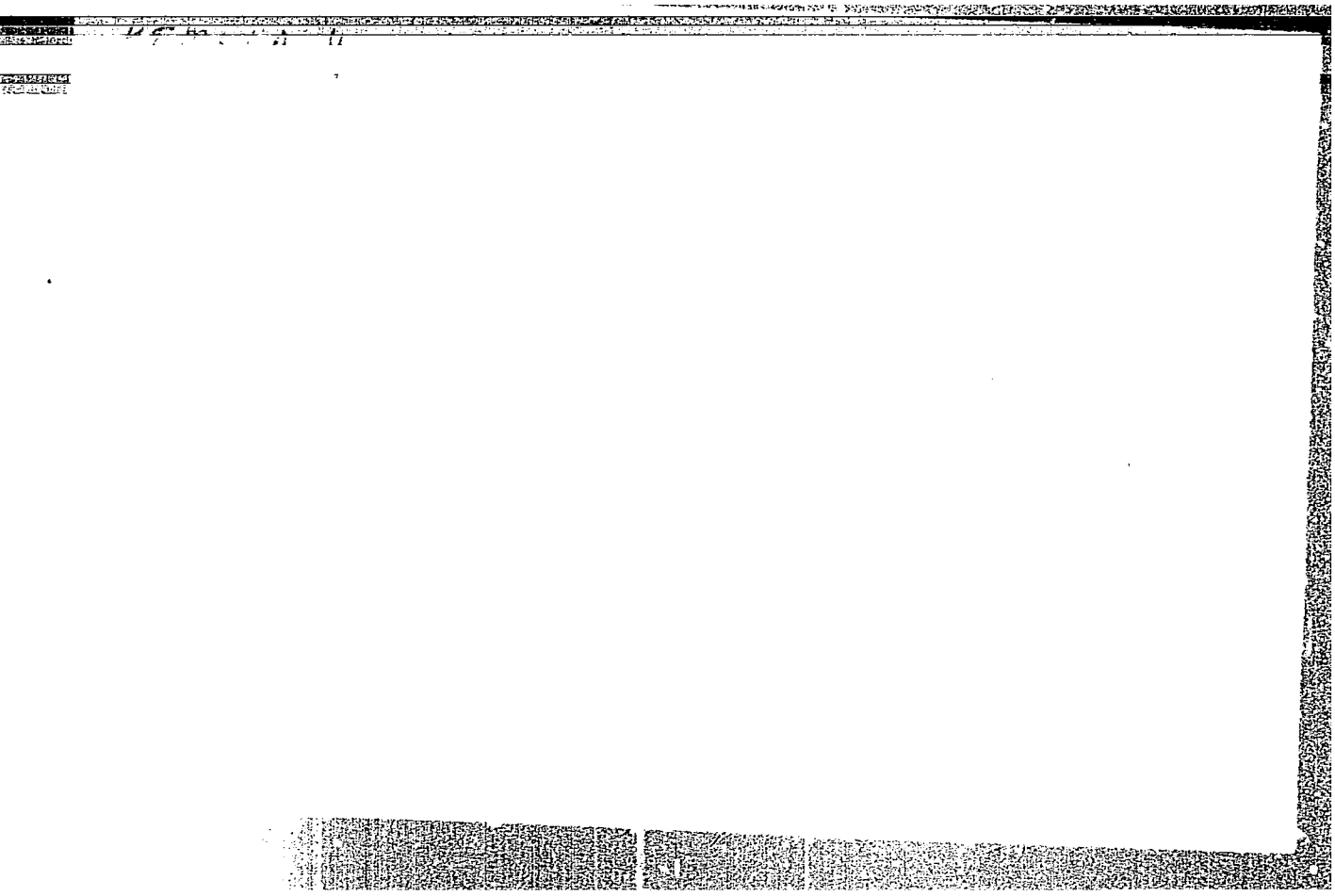

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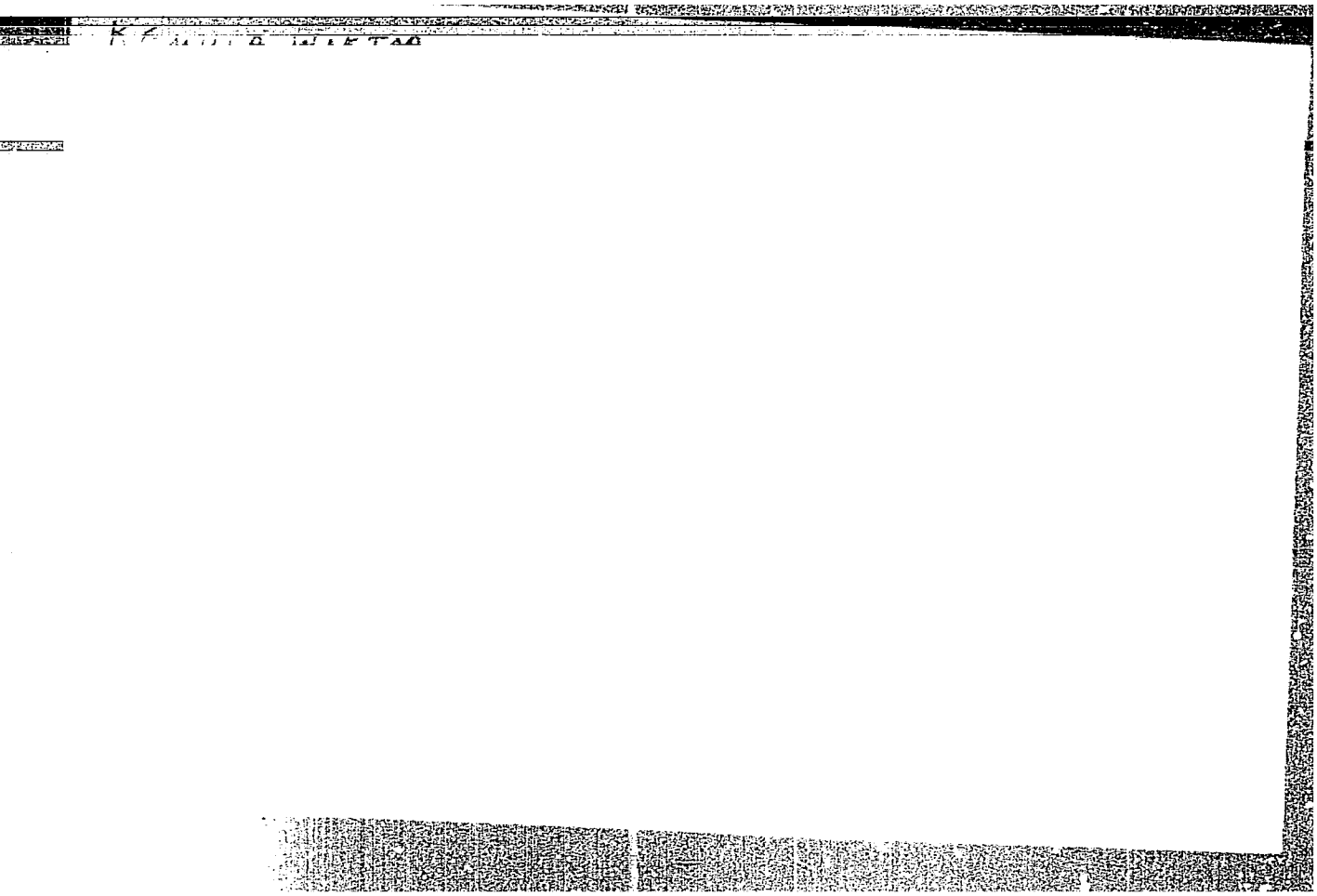

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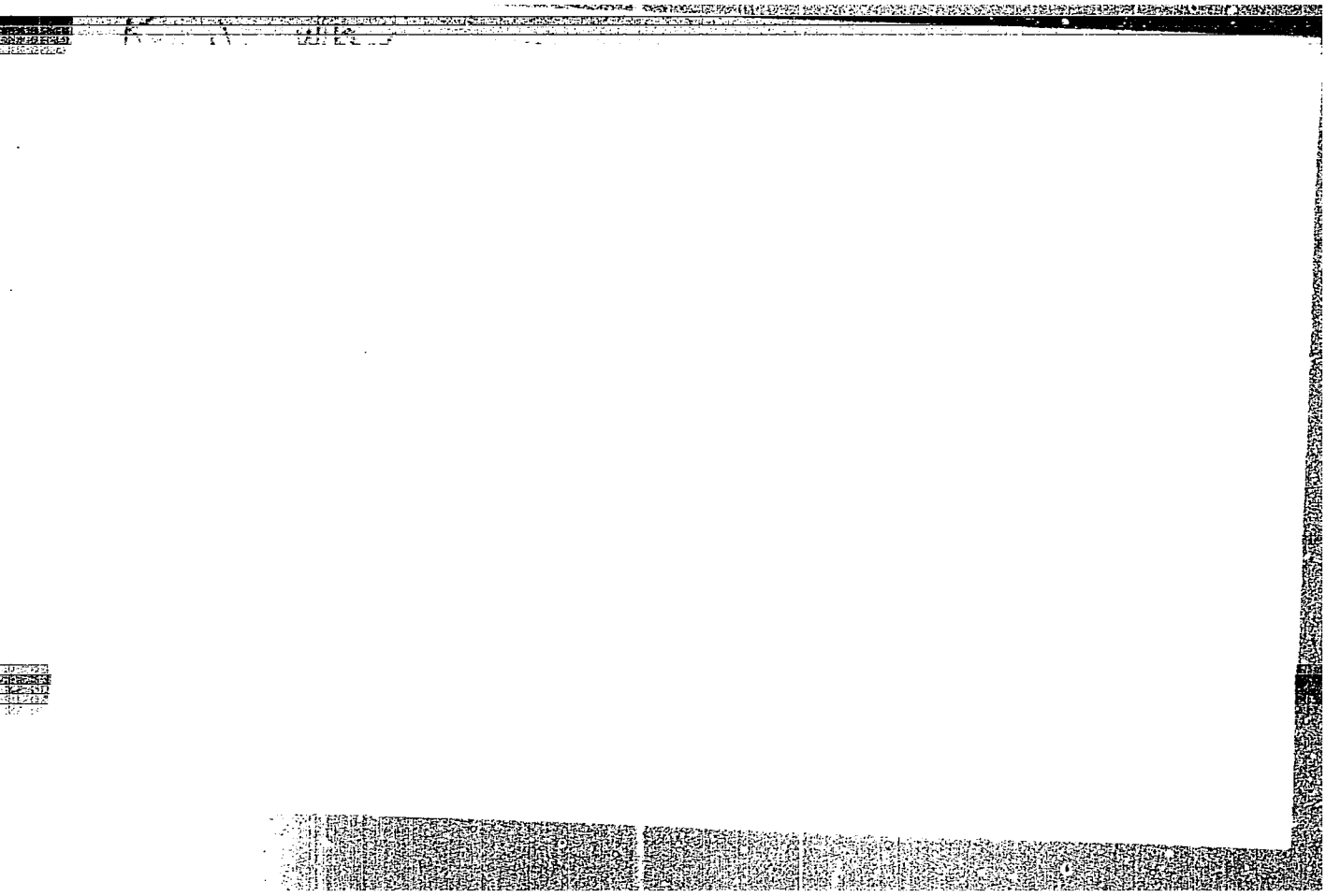

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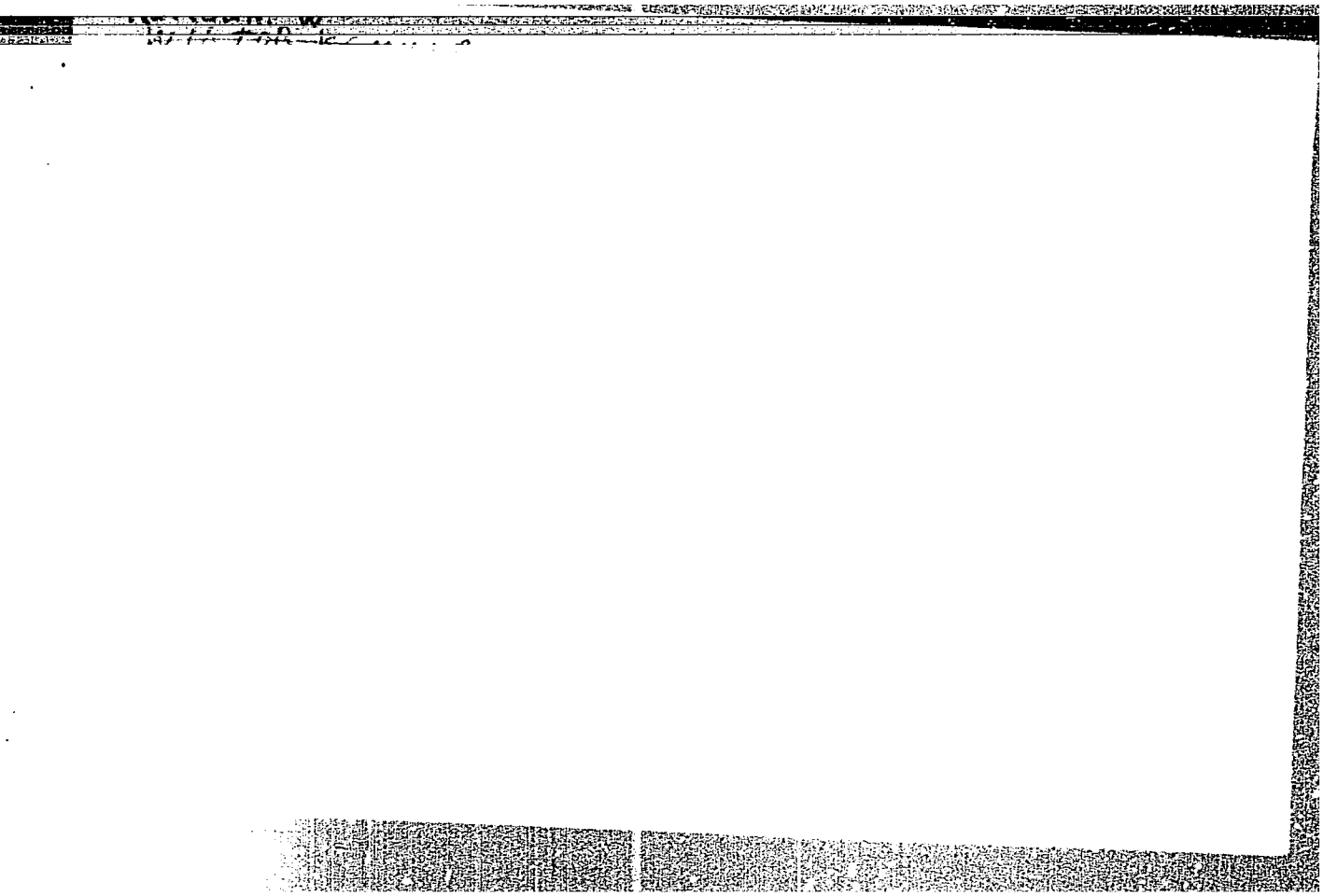

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KEMULA W

3645

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Kemula W., Kornacki J. Polarometric (Amperometric) Indirect Determination of Potassium by Sodium Tetraphenylboron

"Polarometryczne (amperometryczne) posrednie oznaczanie potasu czterofenyloboranem sodowym" Roczniki Chemii (PAN) N. 4 1954 pp. 635-641, 2 figs., 1 tab

Elaboration of a rapid indirect polarometric (amperometric) determination of potassium using sodium tetraphenylboron $Na(C_6H_5)_4B$. The amount of potassium of the order of 1 mg in concentrations not less than 5.10 fm may be determined within an error of ±4%. An excess amount of sodium tetraphenylboron is added to the solution analysed containing potassium and then titrated back by the solution of chromium nitrate $TiNO_3$.

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KEMULA, W.

Chromatographic and polarographic method and its application. p. 453. (PRZEMYSL CHEMICZNY, Vol. 10, No. 9, Sept. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

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KEMULA, W.

(2)

1005. **Electrophoretic separation of proteins on paper and their automatic photometric evaluation.** W. Kemula and W. Bartosiewicz (*Roczn. Chem.*, 1954, 28 [1], 100–108).—The use of electrophoresis on paper for the separation and identification of blood serum proteins is reviewed. Recently Skarżyński, Ostrowski and Mikucki have produced absorption curves on sensitised paper, with the aid of a recording photo-absorptiometer, from mechanically propelled paper chromatograms. It was thus possible to determine, in a mixture of proteins, the percentage of the particular fractions (*Polski Tygodnik Lekarski*, 1952, 7, 121 and 657). It appears, however, that the absorption curves produced in this way are deformed by oscillations caused by the grain of the chromatographic paper. In this article an improved arrangement is described, which automatically registers well-defined photometric curves. The method has successfully been used for the quantitative evaluation of the proteins in blood serum. The electrophoretic apparatus consists of an aquarium glass, containing six paper strips horizontally placed on two glass rods. The ends of the strips are immersed in two glass troughs placed inside the aquarium, each containing 1 litre of a Veronal - Medinal buffer soln. A 120 to 500 V d.c., max. load 100 mA, is supplied by 2 graphite electrodes immersed in the buffer solutions. An ordinary optical lantern with a selenium photo element in place of the objective lens serves as a photometer. An electrically driven mechanism moves the paper strip in front of a 1-mm wide slot in a metal screen; the variations of voltage of the selenium cell are registered as curves by a polarograph. The particular protein fractions are planimetrically evaluated. Ten to twelve hr. are required for complete separation of the proteins in 0·05 ml of blood serum placed on a 32-mm wide Whatman filter-paper strip. Normal human blood serum was found to contain 7·2 per cent. of total protein, consisting of 54·2 per cent. albumin, 4 per cent. α_1-globulin, 9·1 per cent. α_2, 9·7 per cent. β and 23 per cent. γ. Pathological blood serum (multiple myeloma) contained 6·8 per cent. of total protein, consisting of 27·7 per cent. albumin, 4·5 per cent. α_1-globulin, 8·8 per cent. α_2, 16·0 per cent. β and 43·0 per cent. $\gamma_1 + \gamma_2$. The analytical procedure and assemblage of the apparatus are fully described, and blood serum curves are reproduced.

H. Hunstin

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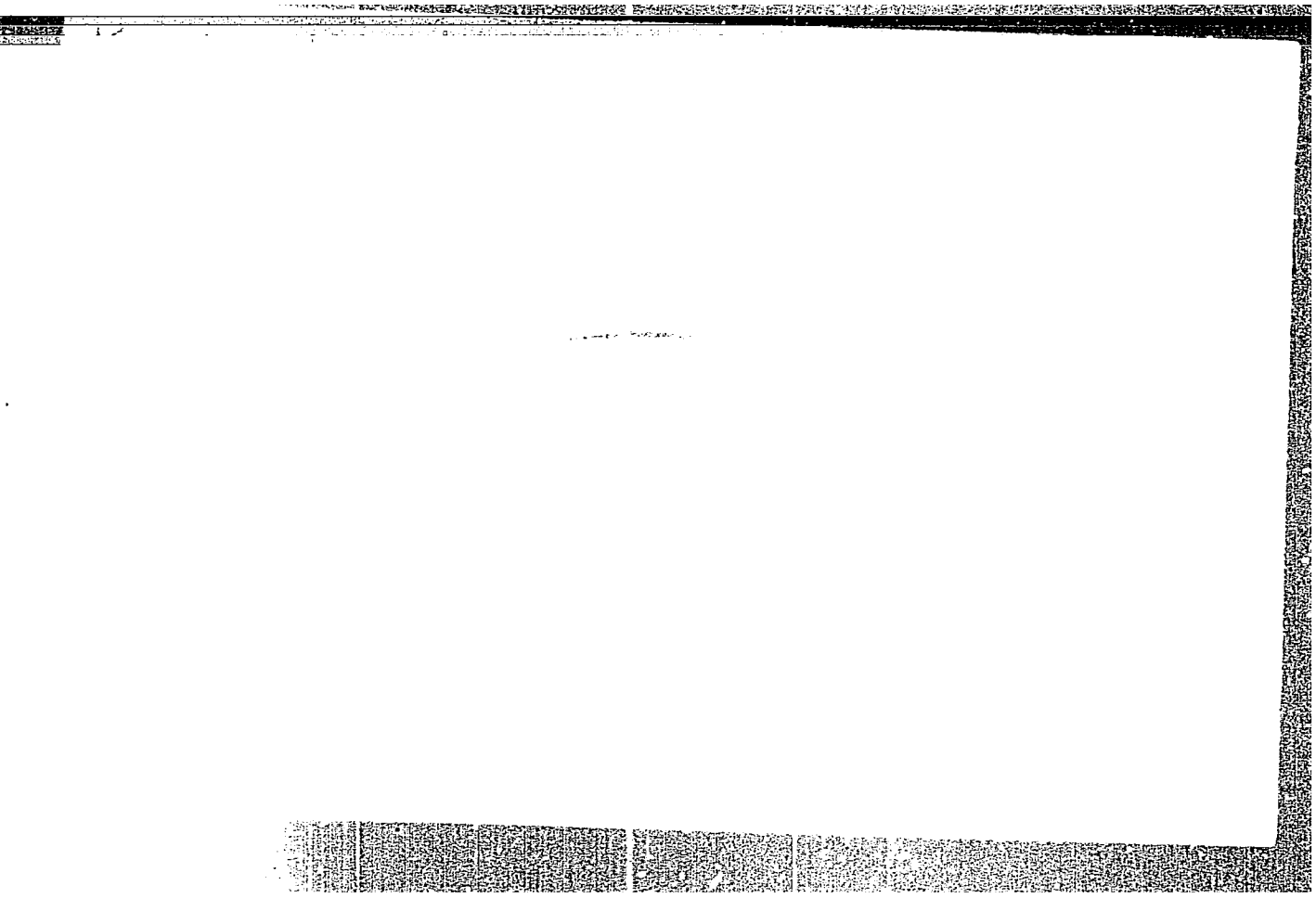

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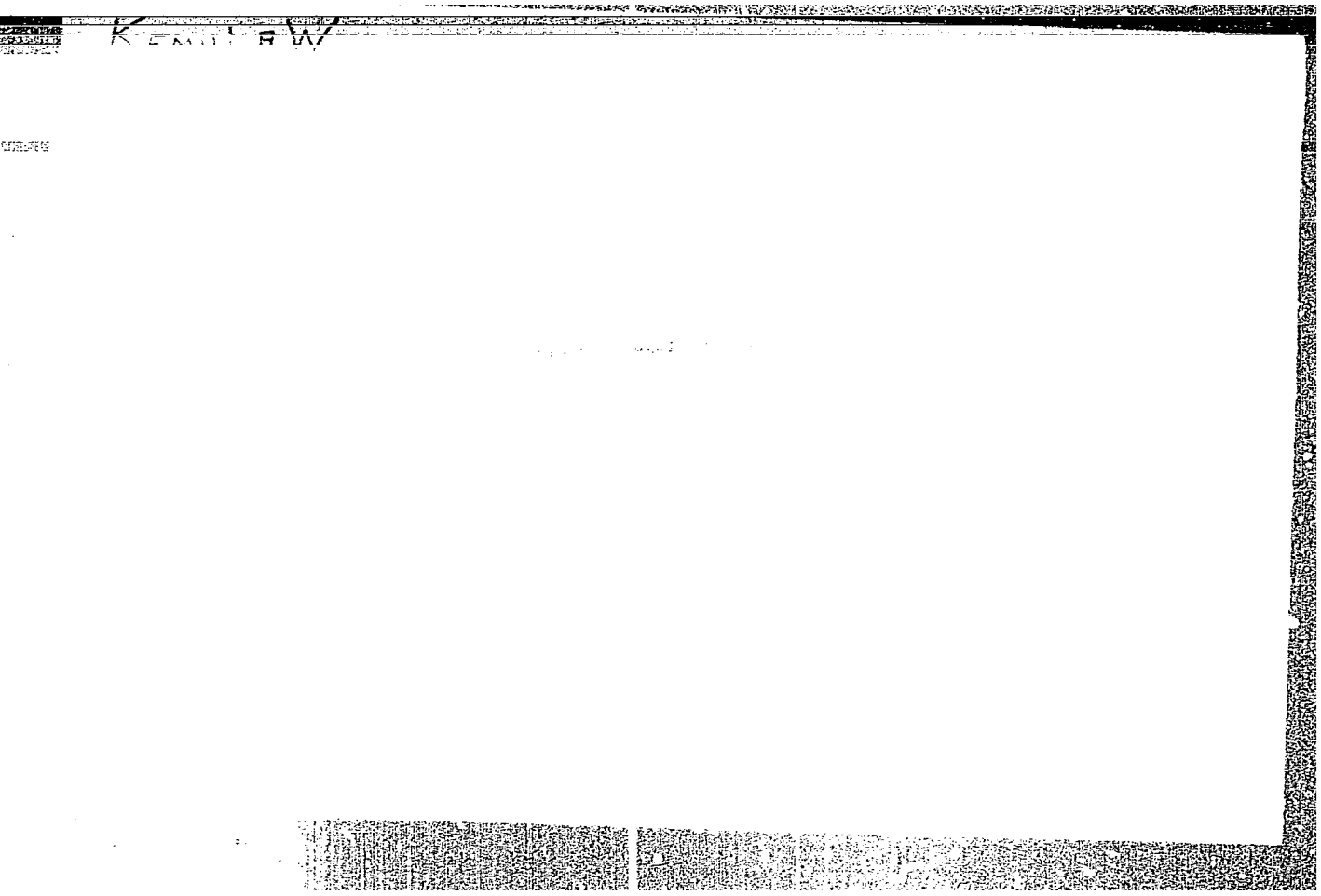

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LESNIA, W.; CZAK, A.

"Microcoulometric Studies of Electroreduction of 1,2,3,4,5,6-hexachlorocyclohexane (Gammexane)", P. 275, (ROCZNIKI CHEMII, Vol. 28, No. 2, 1954, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 4, No. 3, March 1955, Uncl.

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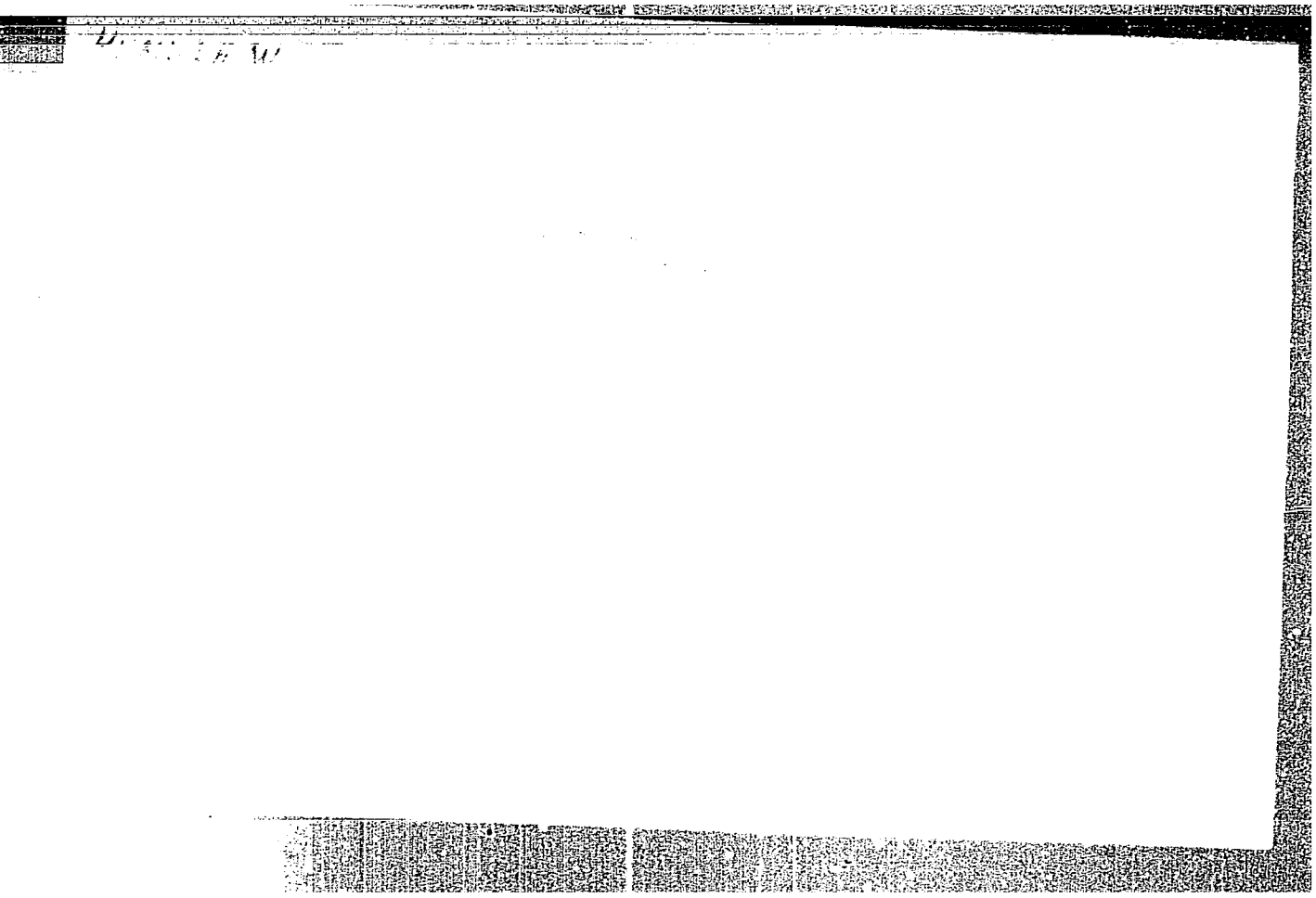

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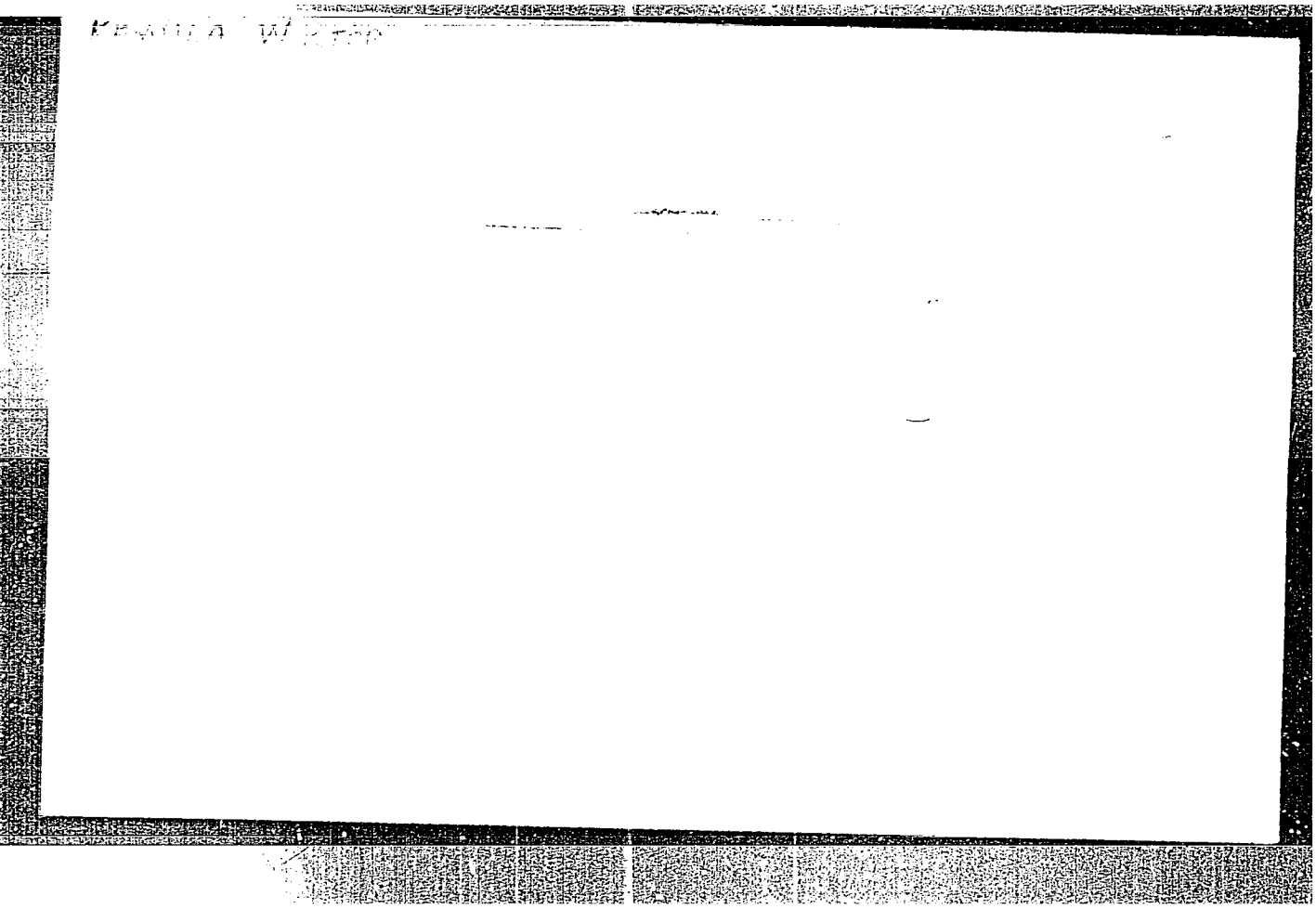

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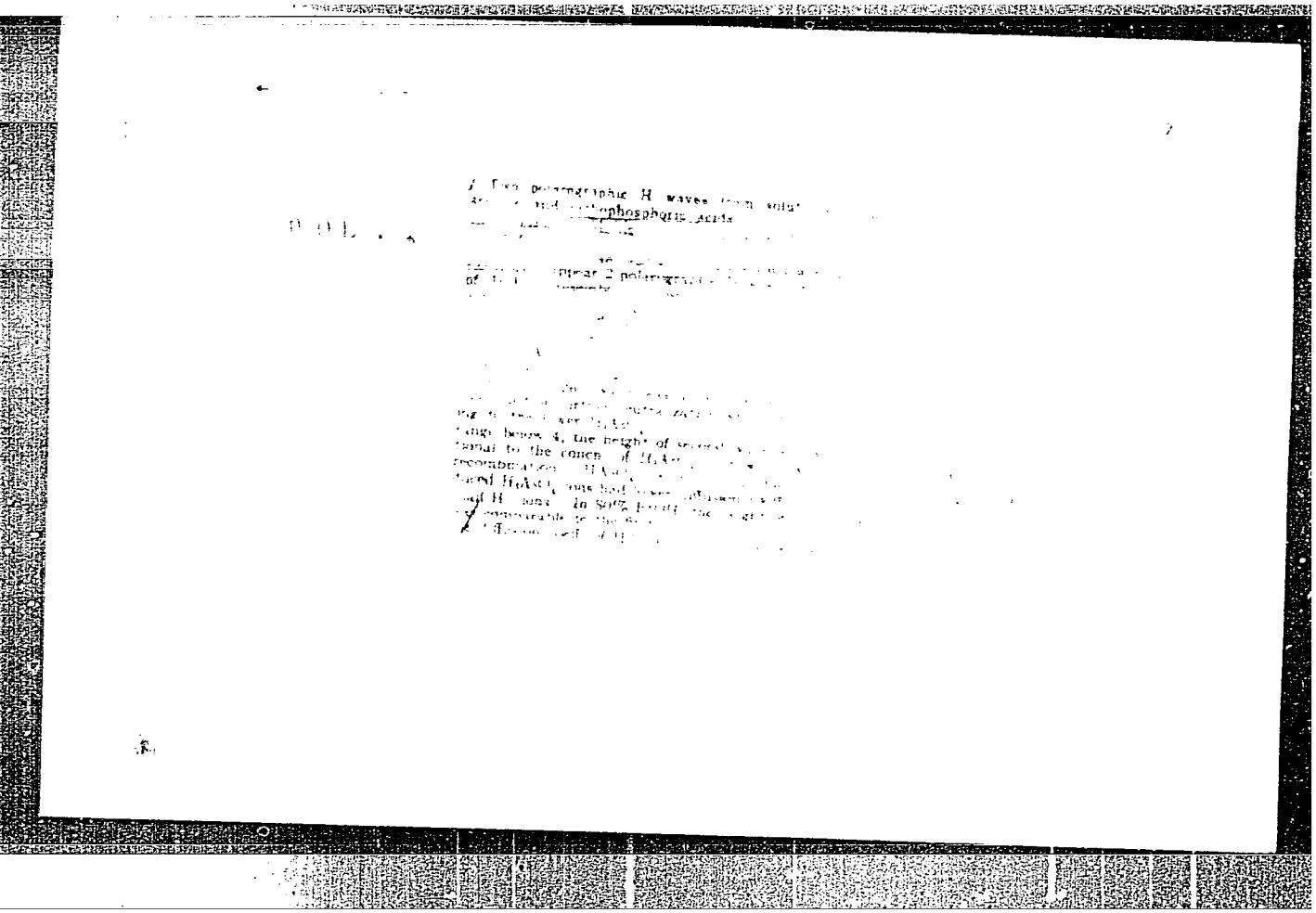

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